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FORESTRY BRANCH—BULLETIN No. 36.

R. H. CAMPBELL, Director of Forestry.

# WOOD-USING INDUSTRIES OF ONTARIO

CENSUS AND STATISTICS OFFICE

OCT 11 1913

TRADE AND COMMERCE

COMPILED BY

R. G. LEWIS, B.Sc. F.

ASSISTED BY W. GUY H. BOYCE.

OTTAWA  
GOVERNMENT PRINTING BUREAU  
1913

DEPARTMENT OF THE INTERIOR, CANADA

Hon. W. J. Roche, Minister; W. W. Coys, Deputy Minister.

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#### **ACKNOWLEDGMENT.**

The data for compiling this bulletin have been gathered largely by correspondence from the different wood-using industries of the province. In most cases this information was given without hesitation when it was made clear that the individual reports would be treated confidentially. The Forestry Branch wish to thank the manufacturers for the interest they have taken in the matter and for their kindness in filling out the schedules sent to them.

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## LETTER OF TRANSMITTAL

FORESTRY BRANCH,

DEPARTMENT OF THE INTERIOR,

OTTAWA, November 1, 1912.

Sir.—I beg to transmit herewith a report on the 'Wood-using Industries of Ontario,' and to recommend its publication as Bulletin 34 of this Branch.

This report contains an account of the quantity, value, and source of supply of the different kinds of wood used by the industries of Ontario. It includes detailed descriptions of the different classes of industries and of the properties of the woods used in those industries. A classified directory of the manufacturers who supplied the data used in the compilation forms an appendix to the bulletin.

I have the honour to be, sir,

Your obedient servant,

R. H. CAMPBELL,

*Director of Forestry.*

W. E. CORY, Esq., C.M.G.,

Deputy Minister of the Interior,

Ottawa



# TABLE OF CONTENTS

	Page.		Page.
Introduction.....	7	Wood Industries—Con.	
Economic Advantages.....	7	Detailed Description of Industries—Con.	
Prices of Wood.....	8	Laundry Accessories.....	39
Kind of Wood.....	9	Mantles.....	40
Summary Statement of Woods Used		Musical Instruments.....	41
in Ontario (Table 'A').....	9	Novelties.....	42
Statement of Woods Purchased Outside		Office and Store Furniture.....	43
of Ontario (Table 'B').....	10	Patterns and Machinery.....	44
Detailed Description of Kinds of Wood—		Picture Frames and Mouldings.....	45
Pine.....	10	Pulleys.....	45
Spruce.....	11	Pulp.....	46
Maple.....	12	Pumps, Tanks and Silos.....	47
Hemlock.....	12	Refrigerators.....	48
Oak.....	12	Sash, Doors and Interior Trim.....	49
Elm.....	13	School, Lodge and Church Furniture.....	50
Basswood.....	14	Sporting Cases.....	51
Birch.....	14	Tables.....	52
Beech.....	14	Vehicles, Carts and Automobiles.....	53
Hard Pine.....	15	Vehicle Bodies.....	54
Ash.....	15	Woodenware.....	55
Balsam Fir.....	16	Miscellaneous.....	56
Hickory.....	16	Willowware.....	57
Cypress.....	16	Proportion of Kinds of Wood Used by	
Gum.....	17	Industries.....	
Chestnut.....	17	Percentages of Different Kinds of Wood	
Poplar.....	17	Used by Industries (Table 'D').....	58
Tulip.....	17	Summary of Average Prices (Table 'E').....	62
Ironwood.....	18	Waste Utilization.....	66
Douglas Fir.....	18	Commodities Manufactured from Each	
Cedar.....	18	Kind of Wood.....	
Mahogany.....	19	Apple.....	67
Cottonwood.....	19	Ash (Black).....	67
Tamarack.....	19	Ash (White).....	67
Cherry.....	19	Balsam Fir.....	68
Walnut.....	19	Basswood.....	68
Spanish Cedar.....	19	Beech.....	69
Butternut.....	20	Birch.....	70
Apple.....	20	Butternut.....	71
Willow.....	20	Boxwood.....	71
Sycamore.....	20	Cedar (Western Red).....	71
Red Cedar.....	20	Cedar (Eastern White).....	72
Ebony.....	20	Cedar (Red).....	72
Sumac.....	20	Cherry.....	72
Minor Species.....	20	Chestnut.....	73
Wood-using Industries—		Cottonwood.....	73
Industries Defined.....	22	Cypress.....	73
Statement of Wood Used in Ontario by		Douglas Fir.....	74
Regions and Industries (Table 'C').....	23	Ebony.....	74
Detailed Descriptions of Industries—		Elm (Rock).....	74
Agricultural Implements.....	24	Elm (White).....	75
Beekcep. and Poultrymen's Sup-		Grenadilla, or Cocusswood.....	76
plies.....	25	Gum.....	76
Boats and Boat Repairs.....	25	Hard Pine.....	76
Boxes and Box Shooks.....	26	Hemlock.....	77
Brushes.....	27	Hickory.....	77
Cars.....	28	Ironwood.....	77
Chairs.....	29	Lignum Vite.....	78
Coffins, Caskets and Shells.....	30	Mahogany.....	78
Slack Cooperage.....	31	Maple (Hard).....	78
Tight Cooperage.....	32	Maple (Soft).....	80
Dairy Machinery.....	33	Oak (Blue).....	81
Fruit Baskets and Crates.....	33	Oak (Quartered).....	81
Half-tone Blocks.....	34	Oak (Red).....	81
Handles.....	35	Oak (White).....	83
Hardwood Flooring.....	36	Pine (Red or Norway).....	84
Household Furniture.....	37	Pine (White).....	85
Kitchen Cabinets.....	38	Poplar.....	87
Ladders and Rungs.....	39	Rosewood.....	87

Commodities Manufactured from Each Kind of Work— <i>Con.</i>	Page.	Classified Directory of Manufacturers— <i>Con.</i>	Page.
Spanish Cedar.....	87	Handles.....	104
Spruce (Sitka).....	87	Hardwood Flooring.....	105
Spruce (Eastern).....	87	Household Furniture.....	107
Sumac.....	88	Kitchen Cabinets.....	108
Sycamore.....	88	Ladders.....	108
Tamarack.....	88	Laundry Accessories.....	109
Teak.....	88	Manteles.....	109
Tulip (Whitewood, Yellow Poplar).....	88	Musical Instruments.....	109
Walnut.....	89	Novelties.....	110
Willow.....	89	Office Furniture and Fixtures.....	110
Classified Directory of Manufacturers— Agricultural Implements.....	90	Patterns and Machinery.....	111
Beekeepers' and Poultrymen's Supplies.....	91	Picture Frames and Mouldings.....	114
Boats.....	91	Pulp.....	114
Boxes, Crating and Cigar Boxes.....	93	Pumps, Tanks and Silos.....	115
Boxes (Trunk).....	100	Refrigerators.....	116
Brushes.....	100	Sash, Doors and Planing Mill Products.....	116
Care and Coaches.....	100	Sporting Goods.....	121
Chairs.....	100	Tables.....	121
Coffins, Caskets and Shells.....	101	Vehicles, Sleighs and Automobiles.....	122
Cooperage.....	101	Vehicle Supplies.....	125
Fruit Baskets and Crates.....	103	Woodenware.....	126
Half-tone Blocks.....	103	Miscellaneous.....	127
		Wickerwork.....	127

## WOOD-USING INDUSTRIES OF ONTARIO.

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The primary object in compiling this bulletin has been to show the numerous ways in which wood is used in various manufacturing industries.

Before considering the advisability of adopting a rational forestry policy, it is necessary to ascertain the economic value of the forest. Leaving aside the discussion of the effect of a forest-cover on climate and water-flow, we must consider the need of wood as a manufacturing material. It can be safely stated that there is practically no industry that does not use wood in some shape or form. In many cases other materials, such as steel, concrete, brick or stone, can be substituted to advantage where wood is now used, but in other cases the use of wood, and perhaps of one particular kind of wood alone, is imperative. Axe-handles cannot be made of steel or any other material but a hard, tough, elastic wood like hickory. Barrels to contain alcoholic liquors must be made of white oak, as no other wood is strong enough to stand the pressure and rough usage a barrel is subjected to and still hold the liquor without impairing its taste. Even red oak is too porous for this purpose.

As our supply of wood is being rapidly exhausted, new uses are found for woods hitherto considered as inferior species. Manufacturers demand certain kinds of wood for certain commodities. In many cases this demand is merely the result of habit or accustomed use of that material, or of mere prejudice in its favour. It is very often the case that some other cheaper and more abundant material will serve the purpose just as well. This bulletin may show some manufacturer that his commodity is being made by another manufacturer from a cheaper material and in just as satisfactory a way.

A firm may be in the habit of purchasing its material from one certain district, thinking that it cannot be obtained elsewhere. This bulletin shows where material for different industries is purchased, what quantities are used annually and what they cost the manufacturer at his factory.

One of the most important parts of forestry is the closer utilization of raw material and the prevention of waste. Scores of examples can be cited where one manufacturer is actually throwing away exactly what another manufacturer needs. An attempt has been made in this bulletin to show how waste is utilized from various industries, in the hope that this information may be of use in saving some of the valuable so-called waste that is annually burned under the boilers of our wood-working establishments or sold as kindling wood. The Forestry Branch has had inquiries from manufacturers asking for information both as to the disposal of waste and as to the possible purchase of such material. In some cases it has been possible to put buyers and sellers of waste into communication with each other to their mutual advantage. It is hoped that this bulletin will result in many more such inquiries, as the Forestry Branch is prepared to give them careful consideration.

### ECONOMIC ADVANTAGES.

Reports were received from over twelve hundred firms using wood in their business. Some of these produced commodities made entirely of wood, others made articles partly of wood and partly of metal, and others used wood only as a means of manufacturing their commodities, as in the case of foundry men, who used wood for patterns and moulding boxes, or manufacturers who made boxes and crates to pack their products in.

On a brief consideration of the capital invested in these industries, the money spent in purchasing raw material and keeping up these factories, the army of men and women employed who are dependent on them for a living—to say nothing of the dealers who handle the products and the consumers who buy them—the importance of perpetuating these industries is realized.

A forestry policy for the province, which has as its aim the management of forest lands to produce a steady supply of wood in continuity, is the only solution of the problem of how to perpetuate the wood-using industries of Ontario. Canadians cannot count on foreign countries to supply them forever, although there are certain species of trees that will not grow in the climate of this country and whose wood must be imported. The economic balance of exports and imports must be insured by the growing of trees adapted to this climate in sufficient quantities to supply the local demand and to provide a surplus for exportation to other countries. In this way the loss entailed to Canadian manufacturers by the necessary importation of certain kinds of wood from other countries can better be afforded. There are millions of acres of land in Ontario that are unfit for agriculture and still are suitable for growing forests. Such lands should be withheld from homestead entry and managed as forests. In some parts of the province large areas of deserted farm lands are found and lands that are not suitable for growing crops but which are being held by farmers who are too poor to move to more fertile regions and who lack the ambition to learn new trades. This land should be managed as forest land and the owners encouraged to take up more fertile farms in the newer parts of the province. There is enough potential forest land unfit for agriculture in Ontario to supply the future needs of wood-using industries, were the population of the province ten times as great as it is now—provided the land were properly managed under a rational forestry policy.

#### PRICES OF WOOD.

The scarcity of wood and its rapidly increasing price is being felt by every industry using wood. In the case of some of the hardwoods, such as white oak and hickory, the native supply is practically exhausted with the exception of odd trees and groups of trees in farmers' woodlots. The prices of these two species have increased in late years at an alarming rate, and even in the United States where the bulk of the supply comes from, a shortage is being felt and the centre of production is constantly shifting to new regions.

It is probable that the price of each kind of wood will continue to increase until it equals or exceeds the cost of growing that particular wood in the forest.

## KINDS OF WOOD.

A total of thirty-four different kinds of wood was reported as having been used by the industries in Ontario. Some others were bought in small quantities for special uses and are not included in the tables, but are mentioned in the description of each industry and included in the list of uses of different woods. Some of the names are names of distinct species, others are commercial or trade names, while others are generic names and include different species. The attempt has been made to follow trade names in the tables as far as possible without going into details as to grades or such distinctions as 'quarter-cut,' 'rift-sawn' or 'sliced veneer.'

Table A shows the summary of the kinds of wood used in Ontario, together with the quantities used annually, average cost, total cost, and the proportion purchased in and outside of the province.

TABLE 'A.'

SUMMARY STATEMENT OF WOODS USED IN ONTARIO.

Kind. of Wood.	Rank.	Quantity used Annually.	Per Cent.	Average Value.	Total Value.	SOURCE OF SUPPLY.	
						Per Cent Purchased in Ontario.	Per Cent Purchased outside Ontario.
		M Ft. B.M.		\$ cts.	\$		
Total.....		807,456	100.0	23 73	19,161,384	82.0	18.0
Pine.....	1	175,507	21.7	25 60	4,492,881	96.6	3.4
Spruce.....	2	154,622	19.1	14 21	2,197,460	88.0	12.0
Maple.....	3	88,701	11.0	21 13	1,874,686	85.0	15.0
Hemlock.....	4	74,779	9.2	16 34	1,222,131	97.3	2.7
Oak.....	5	60,281	7.4	46 07	2,777,323	40.1	59.9
Elm.....	6	52,214	6.4	23 52	1,227,886	96.0	4.0
Basswood.....	7	42,017	5.2	22 72	954,683	96.2	3.8
Birch.....	8	38,616	4.8	21 06	813,267	90.3	9.7
Beech.....	9	29,935	3.7	13 61	407,461	98.2	1.8
Hard Pine.....	10	27,401	3.4	33 56	919,530		100.0
Ash.....	11	12,100	1.5	35 05	424,109	70.6	29.4
Balsam Fir.....	12	11,140	1.4	14 23	158,562	91.9	8.1
Hickory.....	13	9,528	1.1	57 77	550,428	8.3	91.7
Cypress.....	14	5,129	0.6	36 05	184,919		100.0
Gum.....	15	4,215	0.5	26 79	119,682		100.0
Chestnut.....	16	4,113	0.5	28 77	118,316	25.8	74.2
Poplar.....	17	3,991	0.5	20 24	80,784	96.8	3.2
Tulip.....	18	2,997	0.4	53 90	161,848	8.1	91.9
Ironwood.....	19	2,707	0.3	8 04	21,770	100.0	
Douglas Fir.....	20	1,864	0.2	42 05	78,377		100.0
Cedar.....	21	1,579	0.2	30 97	48,902	75.1	24.9
Mahogany.....	22	1,192	0.1	150 32	179,180		100.0
Cottonwood.....	23	877	0.1	51 00	44,732	5.7	94.3
Tamarack.....	24	596	0.1	18 89	11,256	100.0	
Cherry.....	25	553	0.1	44 55	24,724	55.5	44.5
Walnut.....	26	540	0.1	76 33	41,220	17.8	82.2
Spanish Cedar.....	27	103		180 87	18,630		100.0
Butternut.....	28	64		36 08	2,309	84.4	15.6
Apple.....	29	43		46 63	2,005	100.0	
Willow.....	30	20		13 00	360	100.0	
Sycamore.....	31	16		34 81	557	100.0	
Red Cedar.....	32	10		80 00	800		100.0
Ebony.....	33	3		192 00	576		100.0
Sumac.....	34	1		30 00	30	100.0	

It is probable that less of this material is actually grown in Ontario than the figures would seem to indicate. Many manufacturers report wood as having been purchased in Ontario when it was imported from outside and purchased by the manufacturer from an Ontario dealer. It would be difficult to determine the exact origin of all the material used by the manufacturers of the province.

Table B shows the details of the consumption in Ontario of wood purchased outside the province, with the quantities purchased annually and the percentage of each kind purchased in the different regions of supply.

TABLE 'B.'

## STATEMENT OF WOOD PURCHASED OUTSIDE OF ONTARIO.

Kind of Wood.	Rank.	Quantity used Annually.	SUPPLY BY REGIONS.		
			Eastern Canada.	British Columbia.	Foreign.
		M Ft. B.M.	Per Cent.	Per Cent.	Per Cent.
Total.....		144,879	21.1	1.6	77.3
Oak.....	1	36,136	1.9		98.1
Hard Pine.....	2	27,401			100.0
Spruce.....	3	18,502	99.3	0.3	0.4
Maple.....	4	13,306	5.0		95.0
Hickory.....	5	8,739	0.2		99.8
Pine.....	6	5,968	66.6		33.0
Cypress.....	7	5,129			100.0
Gum.....	8	4,215			100.0
Birch.....	9	3,752	34.8		65.2
Ash.....	10	3,556	22.0		78.0
Chestnut.....	11	3,051			100.0
Tulip.....	12	2,755			100.0
Elm.....	13	2,083	73.4		26.6
Hemlock.....	14	2,004	43.9		56.1
Douglas Fir.....	15	1,864		100.0	
Basswood.....	16	1,597	83.1		16.9
Mahogany.....	17	1,192			100.0
Balsam Fir.....	18	907	100.0		
Cottonwood.....	19	827	3.0		97.0
Beech.....	20	543	3.7		96.3
Walnut.....	21	444			100.0
Cedar.....	22	393	6.4	93.6	
Cherry.....	23	247	0.5		99.5
Poplar.....	24	127	100.0		
Spanish Cedar.....	25	103			100.0
Sycamore.....	26	15			100.0
Butternut.....	27	10	100.0		
Red Cedar.....	28	10			100.0
Ebony.....	29	3			100.0

## DETAILED DESCRIPTIONS OF KINDS OF WOOD.

## PINE.

The designation 'pine' in these tables includes three species which are used in Ontario. White pine (*Pinus strobus*) is used in greatest quantity; red pine (*Pinus resinosa*) comes next, and jack pine (*Pinus Banksiana*) is used locally and sometimes mixed with white and red. The reason for grouping these three species, whose

woods have quite different qualities, is because of the fact that they are sold mixed on the market, and many of the users of the material do not distinguish between the species.

White pine is the best material of the three for most purposes, its most valuable qualities being its softness, lightness and comparative durability, coupled with the ease with which it can be worked and the fact that it holds its place with little shrinkage or swelling. Red pine is a harder material, containing more resin and having greater strength for structural purposes. Jack pine has the bad qualities of being weak, very resinous, hard, difficult to work and perishable.

Pine is used by Ontario's industries to the extent of over one hundred and seventy-five million feet a year, forming 21.7 per cent of all the wood used. It is probable that the use of this material is decreasing relatively, on account of the substitution of cheaper woods like spruce, hemlock and balsam fir; spruce especially is being used in place of white pine wherever possible. Clear white pine is now almost impossible to obtain even in Ontario, Canada's premier white pine province. It might safely be stated that the bulk of the white pine of the province has been cut and that the few remaining forests of this material will not last many more years at the present rate of consumption and destruction by fire. The grade of material now being sold grows poorer each year, and the standards of grading are being constantly lowered because first-class material can no longer be obtained. The price of \$25.60 per thousand feet board measure is fairly high for a native-grown wood and is highest among the coniferous woods of the province.

This material is used by twenty-seven of Ontario's industries, and used in greatest quantities by builders, factories, and manufacturers of boxes and box shooks. Pine heads the list in nine of the industries.

The bulk of the material is home-grown, although 3.4 per cent is bought outside the province. The eastern provinces supply two-thirds and the United States one-third of the material purchased outside Ontario, which amounts to almost six billion (6,000,000,000) feet. Only five other woods are imported in greater quantities.

#### SPRUCE.

White spruce (*Picea canadensis*) forms the greater part of the spruce used by Ontario's industries. The other species are red spruce (*Picea rubra*), black spruce (*Picea mariana*) and Sitka spruce (*Picea sitchensis*).

White spruce grows in Canada from Newfoundland to the Yukon and is Canada's main pulp species, on account of its long, tough, colourless fibres. It is gradually taking the place of white pine for dimension timber and boxes, and in many other places where white pine is now the favourite material. Compared to white pine, spruce is less durable, harder to work and not quite so strong, but it is tougher, has a finer grain, is lighter in colour, and, being non-resinous, is tasteless and odourless, and therefore more valuable for boxes and barrels for food-stuffs.

Red spruce comes from the Maritime Provinces and is the most valuable species on account of its fine texture. The black spruce is usually a small tree and its wood is little used. Sitka spruce is brought from British Columbia for a few special uses, such as piano and organ sounding-boards, and masts and spars for large vessels.

Spruce is used in Ontario to almost as great an extent as pine, forming 19.1 per cent of the total. These two woods together make up two fifths of the total and stand well above the other materials on the list.

There is probably more spruce of commercial size in Ontario than any other species, and the supply, while being rapidly depleted by axe and fire, is still very considerable. Its use for pulp is in a sense a wasteful one, as balsam fir, poplar, white birch and jack pine can be made into pulp while they are of little value as lumber.

This wood is used in twenty-one industries, but is the chief wood only in pulp manufacture. Pulp-mills and planing-mills use the greatest quantities, seven-tenths

of the material going into pulp. Spruce comes third on the list of woods purchased outside of the province. Twelve per cent of the spruce used is brought in from outside. Of this the bulk comes from Quebec and the Maritime Provinces with small quantities from British Columbia and the United States.

#### MAPLE.

Maple is the most important hardwood used by Ontario's industries, over three-quarters of a billion (750,000,000) feet being used every year. This wood comes third on the list, with a consumption of eleven per cent of the total. The wood is divided into two classes by manufacturers: hard maple (*Acer saccharum*) and soft maple (*Acer rubrum* or *Acer saccharinum*).

Maple is a hard, stiff material, and its value depends chiefly on these two qualities. It is difficult to season and shrinks considerably and checks badly; it is also quite perishable, but it does not warp or twist after being properly seasoned. The soft maple is slightly tougher but softer and lighter than hard maple, and is not used in very large quantities.

Accidental forms with the grain curled and contorted, known as curly maple and bird's-eye maple, are common and are highly prized for decorative work.

Maple does not grow in any quantity north of the 49th parallel in Ontario, and is practically confined to the basin of the Great Lakes. It seldom grows in pure stands like pine or spruce, and the quantity still standing would be difficult even to estimate. The material is used by twenty-eight industries, heading the list in six of them. The greatest quantities are used for hardwood flooring, wood distillation and furniture. For these purposes and for all others where strength and stiffness are not of paramount importance, birch could be substituted in many cases, and is being substituted more and more each year, as the supply of maple decreases.

Fifteen per cent of the maple used is purchased outside Ontario, mostly from the United States, with a small quantity from Quebec. This wood comes fourth in the list of woods brought in from outside Ontario.

#### HEMLOCK.

Eastern hemlock (*Tsuga canadensis*) is the only species of this genus growing in Ontario and probably the only one used by the industries. The western species (*Tsuga heterophylla*) has not been imported into the province as yet, although it is a much superior material and is cut in great quantities in British Columbia.

Hemlock, the third most important native conifer used in Ontario, forms 9.2 per cent of the total. It is in reality a very poor material, being coarse, brittle, and cross-grained; it is difficult to work, is liable to cup-hakes and other defects and has a tendency to warp and twist. It is, however, stiff and non-resinous, holds nails well, and comes between pine and spruce in durability. The greatest points in its favour are its cheapness and abundance. Ninety per cent of the hemlock is used in building construction for framework or rough sheeting. Ten other industries use small amounts of the material for rough purposes.

Hemlock is not found in Ontario north of a line from Michipicoten Harbour, to the head of Lake Timiskaming, but in its range it is very abundant, and the native supply is still quite adequate for the demand. The province still supplies 97.3 per cent of the material used, and the supply from outside comes half from Quebec and half from the United States.

#### OAK.

More oak is imported into Ontario in a year than any other material, hardwood or softwood. Almost sixty per cent of the annual consumption, or a total of about 36,000,000 feet, was reported as having been purchased in the United States. This

leaves an apparent amount of 24,000,000 feet purchased in the province. The cut of oak lumber in Ontario in 1911 was only a trifle over 6,000,000 feet, and the difference is probably made up of material purchased in the log or in billet or forms other than lumber, and also of material purchased from dealers in Ontario who themselves imported their stock from the United States.

The cut of oak is steadily decreasing and the price increasing in the province, the supply being restricted to small groups and isolated trees in farmers' woodlots. There are so many cases where oak is used because it is the best and often the only material suitable for a particular purpose, that it is a wonder manufacturers have not realized the fact that the species in Ontario is now commercially extinct. The importations from the United States now come chiefly from Tennessee, but the centre of production is constantly shifting and the supply there is being also rapidly exhausted.

The most valuable species of the genus is undoubtedly white oak (*Quercus alba*) and this forms the greater part of the oak used. Next in importance comes red oak (*Quercus rubra*), and small quantities of scrub white oak or 'blue' oak (*Quercus macrocarpa*). In addition to these three, there are a number of other species occasionally used for lumber but of no commercial importance.

The general qualities of white oak are well known and its value as a wood has long been recognized. It is strong, hard, heavy, tough, dense and durable, and possesses a fine even grain and texture. It is, however, rather difficult to season. Red oak is neither as strong nor as durable as white oak, but it is more easily worked. Its density is much less than that of white oak, and its porous nature prevents its use for the better classes of tight cooperage. Scrub white oak, or blue oak, is the hardest and toughest of the three species, but is scarce and has only a limited use in the industries. Oak is one of the most expensive native hardwoods in Ontario used in quantities of over a million feet, board measure. Wood distillation uses oak in greater quantities than any other industry, but does not use much of the timber-sized material. The bulk of the lumber is used by the manufacturers of household trim and household furniture.

Oak is used by twenty-six out of the thirty-seven classes of industries and heads the list in five of them. Manufacturers reported having purchased 59.9 per cent of their oak outside of the province, and of these purchases ninety-eight per cent were made in the United States and only about two per cent in eastern Canada.

#### ELM.

Elm is one of the most universally popular hardwoods in Ontario, and is used for almost every purpose for which a hardwood can be used. Elm and basswood are equally important in this respect, entering into thirty-one of the industries.

The elm used by Ontario's manufacturers is chiefly white elm (*Ulmus americana*) with some rock elm (*Ulmus racemosa*) and a little soft or slippery elm (*Ulmus fulva*).

White elm is probably the toughest of the native hardwoods; it is heavy, hard (when dry) and strong, and has a coarse grain but fine texture; its chief fault lies in the fact that it is not durable and is difficult to season, being liable to warp and twist. This species has a very wide distribution and is fairly abundant all over Ontario south of the Height of Land. It is used locally to an enormous extent. Farmers possessing a few good trees will cut them and haul them to the nearest custom mill to be sawn for their own use or sold. The supply is now pretty well confined to isolated trees or groups, as no extensive elm forests exist in the province.

Rock elm is the most valuable wood of the three, being harder, tougher, stronger and more durable than any other of the American species of elm. It is restricted in distribution and scarce through its range being found only in southern Ontario.

Soft, red, or slippery elm is the poorest material of the three, being soft, and coarse-grained, shivering along the annual rings into cup-shakes. It has a wider

distribution than rock elm but is not abundant in its range, and is little used in the industries. Of the thirty-one industries using elm, six use it more than any other material. Over a half billion (500,000,000) feet of elm is used annually in Ontario, and ninety-six per cent of it is purchased in the province. On the list of woods purchased outside the province, elm comes thirteenth with a little over 2,000,000 feet. Three quarters of this is bought in eastern Canada and one quarter imported from the United States. Almost half the elm is taken by the slack-cooperage industry, but the makers of furniture, boxes and fruit packages also use large quantities.

#### BASSWOOD.

Only one species of basswood (*Tilia americana*) grows in Ontario, but the material bought in eastern Canada and the United States may contain small amounts of less important species found in these regions. Basswood heads the list of what might be termed the soft hardwoods—broad-leaved trees with soft, light wood, such as basswood, chestnut, poplar and tulip. This wood is soft, light, weak and non-durable, with a coarse grain, a fine even texture and a lack of taste and odour. Its value lies in the fact that it is easily worked, does not warp or check and is very tough, holding nails and taking paint well. It is used by thirty-one industries in Ontario and is the chief material in four of these. The greatest quantities were used by slack-cooperage and box factories, demonstrating the popularity of the wood for food-containers on account of its lack of taste and odour. Basswood, like elm, is largely purchased locally in Ontario and cut in small custom mills or worked up from the log in cooperages. Over ninety-six per cent is bought in the province; of the remainder, four fifths come from eastern Canada and about one fifth from the United States.

#### BIRCH.

Ontario's consumption of birch is probably made up of three species. The bulk of the lumber sold is sweet birch (*Betula lenta*), and this is the material that is largely used for hardwood flooring and furniture. Yellow birch (*Betula lutea*) has a wider range of distribution, is used for wood distillation and often substituted for sweet birch. White birch (*Betula alba*, var. *papyrifera*) is the commonest species of the three, but does not usually grow to timber size and is of little commercial value, being used for turnery, spools and small woodenware. Birch is Canada's most abundant hardwood and is rapidly gaining in favour as the supply of the more expensive hardwoods is exhausted. It is fairly hard and strong with a fine grain; it is easily worked, takes a high polish and can be stained to imitate more expensive woods like mahogany, cherry or walnut. 'Wavy' birch is an accidental form due to cross-grain, somewhat similar to 'curly' maple, and is highly prized for ornamental work. Birch is difficult to season, being apt to shrink and check, and is very perishable. This material is also largely purchased in the province, about nine tenths of the supply being bought in Ontario. Two thirds of the remainder is brought from the United States, and consists mainly of sweet birch from Tennessee. Some sweet and some yellow birch are bought in the eastern provinces. Thirty of the industries use birch in making their products, the makers of hardwood flooring and chairs buying the largest quantities. The only manufacturers using more birch than any other wood are the makers of half-tone blocks, but the amount they use annually is almost negligible.

#### BEECH.

Beech is one of Ontario's cheapest hardwoods, probably the cheapest used as lumber. There is only one species used in Ontario (*Fagus grandifolia*), the only one, in fact, growing in America.

The wood of this tree is not a first-class material. While it is hard, strong, tough and moderately stiff, it is often cross-grained, is very perishable and is most liable to shrink, warp and check even after seasoning.

This timber is fairly common in Ontario, south of Lake Timiskaming, and is at present used chiefly for firewood. The supply, while not unlimited, is still sufficient to supply certain industries for some years to come if properly utilized. While eighteen industries use the wood, none of them use it in very great quantities except the manufacturers of miscellaneous products, and here most of it is used for distillation. This is the only industry where beech heads the list. Over four million feet are used annually for hardwood flooring, with birch and maple. This is an economic use of the wood that should be encouraged, as beech makes an excellent floor and takes a high polish. Only about two per cent of the beech used in Ontario was purchased elsewhere. About five hundred thousand feet were brought from the United States and a few thousand from eastern Canada.

#### HARD PINE.

This wood does not grow in Canada, but is imported entirely from the Southern States. The importations are made up of the wood of four distinct species: longleaf pine (*Pinus palustris*), shortleaf pine (*Pinus echinata*), Cuban pine (*Pinus heterophylla*), and loblolly pine (*Pinus taeda*). It was estimated that, in 1911, sixty per cent of the United States cut of hard pine was composed of longleaf and Cuban, although the latter formed probably less than five per cent. The remaining forty per cent was composed of loblolly and shortleaf in about equal quantities. It is probable that these proportions are found in the hard pine imported into Ontario. The wood of all four is alike in general appearance and cannot be separated with certainty by structure. The finer-grained material of all species is sold as longleaf pine, while the coarser wood with wider rings due to more rapid growth is sold as shortleaf pine. Loblolly pine in reality is stronger than shortleaf, but is softer and less durable. Cuban pine has practically the same qualities as longleaf, these two being the strongest and most valuable. Hard pine is sold under a number of trade names, such as Georgia pine, Southern pine, yellow pine and Carolina pine, but it is all made up of these four species. Over twenty-seven million feet of this material was consumed in Ontario by the wood-using industries in 1911, oak alone being imported in greater quantity. The wood of genuine longleaf pine is the heaviest, hardest, strongest and most durable of the four, and is used as a structural timber; it is found in large dimensions, free from defect. It competes with Douglas fir in many cases, the strength values of the two are practically identical, but Douglas fir is probably the lighter of the two materials. Shortleaf pine is not so strong but is less resinous. Loblolly is the poorest material of the four, being very coarse-grained, brittle and perishable.

Hard pine is used in greatest quantities by the manufacturers of building material, agricultural implements, cars and vehicles. It is used altogether by twelve industries and is the leading material in three of them.

#### ASH.

Ash is another native hardwood characterized by its wide range of use and universal value. Two species make up the bulk of the material and their qualities and uses are quite distinct. White ash (*Fraxinus americana*) is the most valuable species and one of the most valuable of Ontario's hardwoods. The wood is moderately hard, heavy and strong, with a coarse straight grain and fine texture. Its chief value lies in its toughness and elasticity, as it is not a durable wood. It is used chiefly for framework of all sorts in vehicles, cars and agricultural implements, and is also extensively used for long handles of agricultural tools. Black ash (*Fraxinus nigra*) is a much softer, weaker wood and is more valuable for decorative

work. More ash is used for interior finish of houses than for any other purpose, and this is mostly black ash. The wood has an attractive grain, is often stained to imitate plain oak and is easily seasoned and worked. It is more durable than white ash, and is used to a considerable extent for basket veneers. Altogether twenty-five of the industries use this material, refrigerator manufacturers buying more ash than any other wood. The lack of taste and odour makes this material specially valuable for food-containers, such as baskets, barrels and boxes.

About thirty per cent of the ash used was purchased outside the province, one quarter of the importations coming from Quebec and three quarters from the United States. The supply of ash in the province has dwindled down to a few restricted districts, although scattered groups of this tree are found all over its range. This lies south of Lake Nipissing for white ash, and almost as far north as James bay for black ash, but the trees north of the height of land are small and unfit for timber.

#### BALSAM FIR.

Balsam fir (*Abies balsamea*) is primarily a pulpwood species, ninety-five per cent of the wood being used for this purpose. It is also used to a slight extent for slack cooperage and rough lumber. The wood is soft, weak and perishable, but has the long, tough, colourless fibres that make it valuable in paper-making. It is being substituted for pine and spruce for these purposes, and could be used more extensively. All the wood is purchased in Canada, eight per cent coming from Quebec.

#### HICKORY.

Hickory is Ontario's most valuable structural hardwood, and the supply in the province is now commercially exhausted. Only 8.3 per cent of the hickory used by the manufacturers was reported as having been purchased in Ontario, and even this may have been partly imported by Canadian dealers. The wood is a very valuable one, apart from its scarcity, on account of its extraordinary hardness, strength, toughness and elasticity, in which it excels all other native hardwoods. There are a large number of species which are not separated in the trade, the bulk of the wood being shagbark hickory (*Carya ovata*) and pignut hickory (*Carya glabra*). Manufacturers distinguish between 'red' and 'white' hickory, discriminating against the red heartwood and favouring the creamy white sapwood. The difference in strength between 'red' and 'white' hickory has been greatly exaggerated. The wood is used chiefly by makers of vehicle supplies and tool handles. Hickory is the best known material for wheel spokes and axe handles. Nine industries reported having used this wood, the largest quantity being used by the vehicle-supply manufacturers.

#### CYPRESS.

Bald cypress (*Taxodium distichum*) is a native of the southern States, and does not grow north of southern Delaware. It is a swamp tree inhabiting flood lands along the coast that are partly submerged for most of the year. The trees grow very slowly and average two hundred years for saw-timber, so that when the existing supply has been cut over, the timber will become commercially extinct. The wood is light and soft, with a fine straight grain and fine texture. It is rather difficult to season, but once seasoned it holds its shape well and is the most durable softwood on the market. It is used wherever contact with moisture is liable to cause decay, and outlasts all the native woods in such situations. Its grain and figure are bringing it into popularity for interior decoration. It is used by eleven industries, almost half the total going into building construction, a quarter into laundry accessories and over ten per cent into tanks and vats. Over 5,000,000 feet are consumed annually by Ontario's industries, cypress being seventh in the list of imported woods.

Canadian jack pine (*Pinus Banksiana*) is sometimes miscalled 'cypress' in eastern Canada, but should not be confused with the true bald cypress.

## GUM.

This material has only lately become commercially important on account of the difficulty in seasoning it. The tree is known as sweet or red gum (*liquidambar styraciflua*) and is not a native of Canada, growing in the United States, south of Connecticut only.

The wood is moderately soft and fairly tough. It is cross-grained, but has a fine uniform texture and takes a good polish. The colour of the wood is not uniform, but runs in irregular streaks. This fact is often taken advantage of in staining red gum to imitate Circassian walnut. It is sometimes called 'satin walnut.' The wood needs careful steam drying direct from the saw in order to prevent warping and twisting. It is used in Ontario chiefly as a substitute for basswood and tulip for inside work in furniture manufacture and body-work in vehicles. Gum can be obtained in greater clear widths than most native woods, is cheap, easily worked and easily bent, and if properly seasoned is a very useful material. Twelve of the industries reported using this wood, the furniture factories consuming over half the total amount imported.

## CHESTNUT.

Sweet chestnut (*Castanea dentata*) is an important furniture wood, largely imported from the northern States. The wood has a very attractive grain and a beautiful figure, but is quite soft and weak and is usually defective, the tree being subject to attack by a destructive beetle. Most of the chestnut used in Ontario is a grade known as 'sound wormy,' which shows the galleries of the insect larvæ, but is otherwise sound. It is used largely for veneer core, as it holds glue well, and in this way it enters largely into the manufacture of pianos, veneered furniture and doors. Its durability and appearance make it also a favourite wood for coffins and for interior trim.

Chestnut grows only in the southernmost parts of Ontario, along the north shore of Lake Erie and in the Niagara Peninsula, and even there it is not found in commercial quantities, most of the trees having been cut some time ago. This tree is not found farther east in Canada. Three quarters of the amount consumed annually is imported from the United States.

## POPLAR.

The different species of poplar other than the cottonwoods are usually mixed indiscriminately on the market. The most important species in Ontario are balm poplar or balm of Gilead (*Populus balsamifera*) and aspen (*Populus tremuloides*). These woods are used chiefly for pulp, but balm poplar is cut into lumber in Ontario and used for rough box-work and slack cooperage. The wood is soft, light, weak and very perishable, but is fairly tough, easily worked and is both tasteless and odourless. If properly seasoned it could be substituted in many cases for the rapidly disappearing basswood and the expensive imported tulip or whitewood, which is often called 'yellow poplar.' The supply of poplar in Canada and in Ontario is enormous, although some of the standing timber is defective. It is highly probable that new uses will be found for this wood when the prejudices against it are overcome.

## TULIP.

Tulip or yellow poplar (*Liriodendron Tulipifera*) is another tree whose northern range just crosses the boundary of the province, being found with chestnut in the southernmost part of Ontario.

This wood is often called whitewood, and is probably the best hardwood in America to hold its shape after seasoning. It is similar to basswood in structure, but is much softer and has a finer grain. Its chief use is for panelling and steam bent-work, as it is readily steamed to any shape and takes paint well. It is

characterized by a wide range of uses but is purchased in greatest quantities for vehicle bodies, piano framework and car sheeting. Fifteen industries use the wood which is largely purchased in the United States.

Tulip costs the manufacturers \$51.96 a thousand, which makes this material the third most expensive native hardwood in the province.

#### IRONWOOD.

Ironwood is not an important lumber as the trees seldom reach sawlog size. There are two species called ironwood in Ontario, namely, hop hornbeam (*Ostrya virginiana*) and blue beech (*Carpinus caroliniana*). They are used mostly for charcoal making and wood distillation, some of the *Ostrya* (to which the name 'ironwood' is more properly applied) being used locally for vehicle supplies and miscellaneous purposes. The wood is very strong, hard, heavy and tough, but difficult to season and liable to warp and check. All the ironwood used is grown in the province.

#### DOUGLAS FIR.

This is primarily a construction timber, and competes with the imported hard pine for this purpose. Lately it has grown in popularity for more decorative purposes, such as interior finish, flooring, panelling and doors. It has an attractive grain and figure, and readily lends itself to staining. Commercially, the tree is found only in British Columbia and the western American States. It grows to a large size, and material of good dimensions is obtainable. While there is in reality only one species (*Pseudotsuga mucronata*), the lumbermen usually differentiate between 'red fir,' the coarse-grained heart of mature timber or fast-growing small trees, and 'yellow fir,' the softer, finer-grained wood of slower growth.

The bulk of the material is divided between the manufacturers of boats, cars, building material and wooden pipes, although large quantities are used for ties, bridge timbers, piles and rough construction work not included in this bulletin. The price paid is high and makes the wood at present more expensive than the imported hard pine.

#### CEDAR.

Cedar is the most durable of the native softwoods, and on this account is used to an enormous extent for ties, poles, shingles, fence-posts and rails. Its chief competitor as lumber is the imported cypress from the southern States, which is supplanting the rapidly disappearing cedar. There are two commercial species, Eastern white cedar (*Thuja occidentalis*) and Western red cedar (*Thuja plicata*) from British Columbia and the western States. The wood of both species is soft and weak, but possesses a remarkably straight, fine grain and fine texture. It is easily and rapidly seasoned, easy to work and splits evenly. The Western species grows to larger sizes and is more abundant and more important commercially than the Eastern tree, but is lighter, softer, weaker, less durable and more spongy in texture. The Eastern species is largely used in the round, or cut into dimension stuff, owing to the scarcity of saw-log sizes. Eastern cedar lumber—wide boards or plank—is almost impossible to obtain in any quantity. Almost half the cedar goes into house construction for verandah and foundation work and siding. Cedar has always been a favourite material for small boats, canoes and launches owing to its lightness and durability. One quarter of the wood used goes into this industry.

Three quarters of the cedar used in Ontario is purchased in the province and nearly one quarter is brought from British Columbia—this being Western red cedar. Small quantities come from eastern Canada, but none is imported from the United States.

## MAHOGANY.

This is in reality only a trade name for the wood of a number of tropical species, the bulk of the imports being the wood of the American mahogany (*Swietenia mahoganii*). This is the most expensive wood used in Ontario, with the exception of Spanish cedar and ebony. Practically all of it is used for decorative work, furniture, desks, pianos and interior finish of cars and vehicles. Its chief value is due to its colour, grain, figure and surface or to its appearance in general, although its mechanical qualities are also excellent.

## COTTONWOOD.

This is a somewhat loose term applied to three species of poplar, none of which grows in Ontario. The wood is valued on account of its toughness and is largely used for vehicle-body work. The importations from the United States are largely of swamp cottonwood (*Populus heterophylla*). The wood purchased from Quebec is common cottonwood (*Populus deltoides*). The wood reported as purchased in Ontario must have been imported by the dealers from Quebec or the United States.

## TAMARACK.

There is only one eastern species of this tree (*Larix laricina*) which is used commercially in Ontario. The western species are important in the west, but do not enter the eastern market. The wood of tamarack is similar to that of hard pine in physical properties, but is more durable and is used more for ties and poles than for lumber. The manufacturers of building material use most of the tamarack that is sawn, for house framing and flooring. It is also used for boats, pumps and tanks. Ontario supplies the demand for this material from her own forests.

## CHERRY.

Black cherry (*Prunus serotina*) is the only species of cherry used commercially. Apart from its beautiful appearance and its scarcity, this is a very valuable material in its technical qualities. It is heavy, hard and strong with a fine straight grain and close texture; it splits easily and is easy to work, takes a fine polish and keeps its shape well. There seem to be still a few trees or groups of trees in farmers' woodlots that are bought up each year and sawn in custom mills. The car manufacturers favour this material above all others for the interior work of the better class of coaches. It is also used for office desks and furniture. Only 44.5 per cent of the wood is purchased outside the province and this comes almost entirely from the United States.

## WALNUT.

Black walnut (*Juglans nigra*) is the most expensive hardwood native to Ontario and is more or less of a curiosity at the present time. A few years ago walnut for furniture was in fashion as oak and mahogany are now, and what little supply the province had was quickly exhausted. The wood is mostly imported from the United States and is used almost entirely for piano and organ-case work.

## SPANISH CEDAR.

Spanish cedar (*Cedrela odorata*) is the most expensive wood on the list excepting ebony. The high price may be partly due to the fact that the material is purchased chiefly in veneer for cigar boxes and in reducing the surface feet of veneer to board feet no allowance is made for waste. The material is all imported from Mexico.

## BUTTERNUT.

Butternut (*Juglans cinerea*) is sometimes called 'white walnut,' and resembles the more valuable species in grain and texture, but is much lighter in colour and is both soft and weak. It is used by the boat-makers for planking and finishing. Fifteen per cent of the total is purchased in Quebec.

## APPLE.

Apple wood is used for special purposes like the handles of tools, and is purchased locally in Ontario. The wood may be of any species of the subgenus *Malus*.

## WILLOW.

Willow (*Salix nigra*) is used exclusively for artificial limbs, on account of its lightness and toughness and the fact that it is unaffected by atmospheric changes.

## SYCAMORE.

Sycamore (*Platanus occidentalis*) is not a valuable wood, being cross grained, coarse and perishable and difficult to season. It is largely used for furniture, having a peculiar silver grain, and for handles of tools. The tree is confined to a part of the Western peninsula of Ontario which forms its northern limit. It is of more commercial value in the United States.

## RED CEDAR.

Red cedar, aromatic cedar, or more properly juniper (*Juniperus virginiana*) grows in Ontario, but is not used to any extent on account of the scarcity of commercial sizes. It is imported from the United States for moth-proof chests on account of its aromatic odour. It should not be confused with Western red cedar (*Thuja plicata*), or with jack pine (*Pinus Banksiana*), which is sometimes called 'juniper.'

## EBONY.

Ebony is imported from different foreign countries and is cut from the heart of different species of the genus *Diospiros*. It is used in Ontario for toilet-brush backs and some smaller musical instruments.

## SUMAC.

Sumac (*Rhus hirta*) is a small tree with orange-coloured wood streaked with broad green rays. It is of no commercial value, but has been used for decorative panels on small boats. It is a native of southern Ontario, but seldom grows to a twelve-inch diameter, even farther south where it reaches its highest development.

## MINOR SPECIES.

The following few woods are used in Ontario for special purposes and in small quantities, so small that they are not included in the tables:—

GRENADILLA or CUCKSWOOD (*Brya Ebenus*) is sometimes called Jamaican or West Indian ebony, although it is not a true ebony. It is purchased by the pound and is very expensive, being used only for flutes and clarionets.

ROSEWOOD is a trade name for a number of tropical species whose wood is rose-coloured and fragrant. African rosewood is most common, and is known as *Pterocarpus crinaceus*. It is used for the more expensive kinds of decorative work on pianos, furniture and cabinets.

TEAK (*Tectona grandis*) is a native of India, and at one time was used extensively for ship-building. The wood is hard, strong and very durable and keeps its

shape almost indefinitely. It has now become scarce and expensive, and is used in Ontario only for electrical apparatus and interior finish in launches.

LIGNUM VITÆ (*Guaiacum officinale*) is a tropical American wood of special value on account of its extraordinary hardness, heaviness and durability. It is used for wooden bearings, mallets and dowels.

Boxwood (*Buxus sempervirens*) comes from Turkey and is used for making wood engravings.

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## WOOD-USING INDUSTRIES.

### INDUSTRIES DEFINED.

This bulletin contains statistics on the wood used by manufacturers in Ontario where such material is purchased in the form of logs, bolts, billets or rough lumber and worked up in the factory to form the various commodities. The figures in the tables do not include ties, poles, piles, bridge-timbers, wine-props, shingles or lath, nor do they include rough lumber purchased from saw-mills and used in building and other structural work without further manufacture. They do include, however, the products of planing-mills and builders' factories.

Manufacturers who purchase their material in a partly finished form or who merely assemble parts in their factories that have been manufactured elsewhere are not included. It has been necessary to exclude such manufacturers to prevent duplication of reports.

Where three or more factories produce a similar commodity it has been called an industry and has been described separately. For example, there are a large number of factories that manufacture chairs exclusively, so chair-making has been treated as a separate industry from furniture manufacture.

Where less than three firms make one commodity, the details of the industry are included under the heading of 'Miscellaneous' in order to avoid disclosing the identity of the individual firms. Where a number of firms manufacture similar commodities and use similar material, these have been grouped to form an industry, (as with bee-keepers' and poultrymen's supplies), although their products are not identical. The classes are described separately and the description will make the classification clear.

Table C gives a summary of the wood consumed by the different industries, with the total quantity used annually, the percentage distribution to each industry, the average value per thousand feet, the total value, and the percentage supplied by each region.

TABLE 'C'

SUMMARY STATEMENT OF WOOD USED IN ONTARIO BY REGIONS AND INDUSTRIES.

Industry.	Quantity used Annually.	Per Cent.	Average Value.	Total Value.	SUPPLY BY REGIONS.			
					Ontario.	Eastern Canada.	British Columbia	Foreign.
	M Ft.B.M		\$ cts.	\$	Per Cent.	Per Cent.	Per Cent.	Per Cent.
Total.....	807,456	100.0	23 73	19,161,384	82.0	3.8	0.3	13.9
Sash and Doors.....	252,444	31.3	24 59	6,207,839	86.5	3.4	0.2	9.9
Pulp.....	119,496	14.8	12 58	1,503,236	90.8	9.2		
Boxes.....	76,412	9.5	18 53	1,416,054	95.0	4.2		0.8
Miscellaneous.....	56,714	7.0	9 10	5,878	97.8	1.2	0.7	0.3
Hardwood Flooring.....	52,547	6.5	24 86	1,306,247	70.6	0.2		29.2
Cooperage (Shack).....	42,946	5.3	21 57	926,492	99.1	0.8		0.1
Household Furniture.....	37,070	4.6	30 59	1,133,884	70.8	1.4		27.8
Agricultural Implements.....	22,516	2.8	35 43	797,739	52.1	1.5		46.4
Vehicle Supplies.....	21,292	2.6	52 13	1,109,866	31.1	2.6		66.3
Vehicles.....	15,597	1.9	37 89	591,009	57.5	4.5	0.1	37.9
Musical Instruments.....	12,027	1.5	38 22	459,664	62.8	7.5	0.4	29.3
Office Furniture.....	10,496	1.3	43 73	458,968	56.7	2.6		40.7
Chairs.....	9,597	1.2	27 73	266,118	71.7	7.1		21.2
Cars.....	9,020	1.1	35 12	316,788	34.7	9.2	5.0	51.1
Handles.....	6,907	0.9	29 99	207,156	65.7	2.9		31.4
Coffins.....	6,514	0.8	23 84	155,277	77.1	10.2		12.7
Fruit Baskets.....	5,489	0.7	16 53	90,747	96.4	2.8		0.8
Woodenware.....	5,461	0.7	17 86	97,550	99.1			0.9
Dairy Machinery.....	5,448	0.7	27 64	150,577	90.7			9.3
Patterns.....	5,362	0.7	33 42	179,206	84.2	1.7	0.3	13.8
Tables.....	5,164	0.6	37 93	195,882	53.5	0.6		45.9
Laundry Accessories.....	4,490	0.6	28 84	129,507	51.5		1.3	47.2
Cooperage (Tight).....	1,111	0.5	64 60	287,088	29.8			70.2
Boats.....	3,466	0.4	45 60	158,199	69.5	2.4	15.1	13.0
Refrigerators.....	2,765	0.3	25 47	70,463	83.7	9.0		7.3
Pumps and Tanks.....	2,443	0.3	38 13	93,144	63.9	0.8	8.2	27.1
School Furniture.....	2,144	0.3	26 47	56,752	61.0	8.4		30.6
Sporting Goods.....	1,870	0.2	37 48	70,091	72.5	3.2		24.3
Novelties.....	1,520	0.2	26 59	40,415	95.5			4.5
Pulleys.....	1,326	0.2	24 75	32,820	92.5			7.5
Kitchen Cabinets.....	1,129	0.1	25 65	28,962	85.7			14.3
Picture Frames.....	1,012	0.1	32 69	33,085	75.0			25.0
Brushes.....	893	0.1	25 07	22,386	99.1			0.9
Beekeepers' Supplies.....	549	0.1	23 31	12,800	100.0			
Mantels.....	514	0.1	52 00	26,727	19.5	9.7		70.8
Ladders.....	347	0.1	31 68	10,993	55.3		0.6	44.1
Half-tone Blocks.....	21	0.0	84 52	1,775	57.1	4.8		38.1

¹ Less than one tenth of one per cent.

## DETAILED DESCRIPTIONS OF INDUSTRIES.

TABLE 1—AGRICULTURAL IMPLEMENTS.

Kind of Wood.	Per Cent.	Quantity.	Value.	Average value.	SUPPLY BY REGIONS.			
					Ont.	Eastern Canada.	B.C.	Foreign.
		M Ft.B.M	\$	\$ cts.	M Ft.B.M	M Ft.B.M	M Ft.B.M	M Ft.B.M
Total..	100.0	22,516	797,739	35.43	11,720	540		10,416
Hard Pine.....	35.2	7,932	307,042	38.70				7,932
Maple.....	19.4	4,365	134,189	30.74	4,052			313
Oak.....	9.8	2,201	105,290	47.83	1,331	90		780
Elm.....	8.9	1,997	56,152	28.11	1,817			180
Pine.....	7.6	1,706	52,554	30.80	1,706			
Basswood.....	5.5	1,246	32,812	26.33		250		
Ash.....	4.8	1,090	46,148	42.33	996			
Birch.....	4.2	947	29,699	31.35	365			725
Hickory.....	2.3	509	19,488	38.28	947			290
Beech.....	1.1	248	5,468	22.04	219			25
Gum.....	0.3	60	1,680	28.00	223			
Cypress.....	0.2	55	2,150	39.09				60
Fulip.....	0.2	51	2,535	49.70				55
Cottonwood.....	0.1	35	1,050	30.00				51
Cedar.....	0.1	30	480	16.00	30			35
Hemlock.....	0.1	24	588	24.50				
Spruce.....	1	9	170	18.88	24			
Chestnut.....	1	6	144	24.00	9			
Tamarack.....	1	5	100	20.00	6			
					5			

<sup>1</sup> Less than one tenth of one per cent.

Under this heading are included the manufacturers of implements used in tilling the soil, such as ploughs, harrows, cultivators, etc., and farm machinery used in harvesting the crops and preparing them for market, such as harvesters, binders, threshing machines, fanning-mills and horse-powers. Nineteen kinds of wood were used in this industry, imported hard pine leading with over 35 per cent of the total. The woods used in greatest quantities are chosen for their strength, toughness and durability, as products of this nature are subjected to rough usage. Maple, oak, elm, ash and hickory have been the most popular woods in the past, but imported hard pine is being rapidly substituted for these native hardwoods in many instances. Pine and basswood are used largely for box work and parts of implements where ease of working is of more importance than strength. As many factories purchase the gears of their implements and assemble these, manufacturing only the tops and box parts, the importance of these two softer woods is readily explained. The material is purchased chiefly in the form of rough lumber from one to four inches in thickness and in dimension sizes, all of the best grades. Of this material 52.1 per cent is purchased in Ontario, 1.5 per cent in Eastern Canada and the remaining 46.4 per cent in the United States.

The industry uses 29 per cent of the hard pine used in Ontario, more than any other industry except the manufacturers of sash and doors, and pays more for it than any other industry except the manufacturers of heavy machinery. The makers bought the most expensive hemlock. Ontario's agricultural implements are exported to all parts of the world. Many of the larger factories are branches of American firms established in the province to satisfy the Canadian demand.

TABLE 2—BEEKEEPERS' AND POULTRYMEN'S SUPPLIES.

Kind of Wood.	Per cent.	Quantity.	Value.	Average Value.	SUPPLY BY REGIONS.			
					Ont.	Eastern Canada.	B. C.	Foreign.
		M Ft.B.M	\$	\$ cts.	M Ft.B.M	M Ft.B.M	M Ft.B.M	M Ft.B.M
Total.....	100.0	549	12,800	23.31	549			
Pine.....	67.4	370	8,820	23.84	370			
Basswood.....	18.9	104	2,600	25.00	104			
Spruce.....	13.7	75	1,380	18.40	75			

The commodities manufactured by this industry are chiefly incubators, brooders, bee-hives, poultry-crates, portable poultry-houses and fittings, such as nest-boxes, food-hoppers, roosts, etc. Three species only were reported, pine leading with 67.4 per cent. The requirements of a material for this industry are softness, lightness, ease of working, comparative durability and permanency of form in the finished product.

The material is purchased in the form of rough inch and inch lumber, all coming from Ontario where the bulk of the products are sold.

TABLE 3—BOATS AND BOAT REPAIRS.

Kind of Wood.	Per cent.	Quantity.	Value.	Average Value.	SUPPLY BY REGIONS.			
					Ont.	Eastern Canada.	B. C.	Foreign.
		M Ft.B.M	\$	\$ cts.	M Ft.B.M	M Ft.B.M	M Ft.B.M	M Ft.B.M
Total.....	100.0	3,469	158,199	45.60	2,411	83	525	450
Pine.....	19.5	677	23,343	34.48	673	1		3
Oak.....	16.0	556	32,950	59.28	444	11		101
Douglas Fir.....	12.3	427	17,348	40.63			427	
Basswood.....	12.2	425	13,457	31.66	415	10		
Cedar.....	12.1	420	23,192	55.22	319	5	96	
Elm.....	6.5	221	8,494	37.92	209			15
Cypress.....	6.0	209	11,040	52.82				209
Maple.....	4.7	164	4,912	29.95	116	3		45
Spruce.....	3.4	118	4,416	37.42	74	42	2	
Mahogany.....	2.0	70	11,062	158.03				70
Butternut.....	1.6	55	1,965	35.73	45	10		
Tamarack.....	0.9	32	1,063	33.22	32			
Ash.....	0.6	20	708	35.40	20			
Beech.....	0.4	15	525	35.00	15			
Cherry.....	0.4	14	1,065	76.07	11			
Birch.....	0.3	11	377	34.27	10	1		
Chestnut.....	0.3	10	395	39.50	10			
Tulip.....	0.3	9	315	35.00	9			
Walnut.....	0.3	8	945	118.12	5			3
Small Cedar.....	1	2	550	183.33				3
Gum.....	1	1	38	38.00				1
Sumac.....	1	1	30	30.00	1			

<sup>1</sup> Less than one tenth of one per cent.

Manufacturers included in this class make canoes, skiffs, row-boats, dingy, sail-boats, yachts, launches, tugs, steamboats and large sailing vessels. The bulk of the industry consists in the manufacture of canoes and gasoline launches.

Twenty-two kinds of wood were used in making these products in Ontario. headed the list with almost twenty per cent of the total. Pine, cypress, basswood, spruce, mahogany, butternut and tamarack are used for planking smaller vessels such as launches, row-boats and canoes; oak, pine and Douglas fir are used for planking heavy tugs and steamboats; oak, elm, maple, tamarack, ash and birch are used for framework, and oak, mahogany, butternut, ash, beech, cherry, tulip, chestnut, basswood, walnut, Spanish cedar and gum are used for interior work, decorative finish, gunwales and decking. The small item of sumac is also for decorative work. With the increase in steel-ship construction this industry is gradually becoming confined to smaller pleasure craft, although large quantities of wood are still being used for decking and interior finish, even in steel-hulled vessels.

This industry used 5.9 per cent of the butternut used in Ontario—more than all other industries combined. Only the manufacturers of sash and doors used more cedar than the boat-builders. The industry paid the highest average price for species (basswood, beech, elm, spruce and tamarack) and paid an average price of \$15.60 for their material in general. This average price is exceeded only by furniture and other industries. The material was purchased in various forms. For interior finish and decorative work all sizes from 1/20-inch veneer to inch lumber was used—much of the oak being quarter-cut. One and two-inch lumber was used for planking, and dimension sizes for framing. Two thirds of the wood was purchased in Ontario, 2.4 per cent in Quebec, 15.1 per cent in British Columbia, and 13 per cent in the United States and foreign countries.

Canadian canoes are known the world over, from the Thames in England to the Zambezi in Africa. Most of these are the famous Peterborough model, made around the lakes in the highlands of Ontario. Launches built in the province are shipped as far west as Vancouver, B.C.

TABLE 4—BOXES AND BOY SHOOKS.

Kind of Wood.	Per cent.	Quantity.	Value.	Average Value.	SUPPLY BY REGIONS.			
					Ont.	Eastern Canada.	B.C.	Foreign
		M Ft.B.M	\$	\$ cts.	M Ft.B.M	M Ft.B.M	M Ft.B.M	M Ft.B.M
Total.....	100.0	76,112	1,416,054	18.53	72,396	3,195		0
Pine.....	61.3	46,861	880,511	18.79	45,067	1,604		19
Spruce.....	18.6	14,220	242,955	17.09	13,010	1,207		
Basswood.....	7.9	6,047	126,380	20.90	6,030	17		
Elm.....	6.6	5,019	87,364	17.41	4,784	235		
Hemlock.....	2.8	2,160	35,153	16.27	1,960			20
Maple.....	1.0	786	9,580	12.19	786			
Ash.....	0.6	458	7,606	16.61	351	107		
Poplar.....	0.3	229	3,238	14.14	229			
Birch.....	0.2	187	1,706	9.12	187			
Beech.....	0.2	151	1,233	8.31	151			
Spanish Cedar.....	0.1	96	16,850	175.52				
Chestnut.....	0.1	89	1,511	16.98				
Gum.....		50	1,050	21.00	1			96
Cedar.....		30	385	12.83	30			38
Cottonwood.....		25	450	18.00				50
Balsam Fir.....		4	60	15.00	4	25		

<sup>1</sup> Less than one tenth of one per cent.



pencil for toilet brushes, a wide range of material can be used. Many manufacturers of other commodities cut their waste to certain sizes for brush-blocks for this industry. Wood for this purpose should be tough (to withstand splitting when bored for bristles) and hard (to withstand rough usage). For scrub-brushes and stable-broom durability is a necessity; for the finer class of toilet-brushes, finish and appearance are more important.

Nine woods were reported, elm heading the list with 38 per cent. Elm, maple and birch together form nearly nine tenths of the total. Although these manufacturers can use small material, they demand the best grades, as is shown by the price of \$25.07, which is above the general average. This industry takes all the elm imported with the exception of a little used for musical instruments. It bought the cheapest mahogany at \$80 a thousand, purchased as rough lumber. Most of the material is purchased in the form of rough lumber, but some factories purchase selected hardwood blocks of various sizes. Over ninety nine per cent is purchased in Ontario and the remainder is imported from foreign countries.

As an industry this is not important from the standpoint of quantity of material used, which is below a million feet a year, but it is important on account of the close utilization possible and the wide use of the commodities manufactured.

TABLE 6—CARS.

Kind of Wood.	Per cent.	Quantity.	Value.	Average Value.	SUPPLY BY REGIONS.			
					Ont.	Eastern Canada.	B.C.	Foreign.
		M Ft.B.M	\$	¢ cts.	M Ft.B.M	M Ft.B.M	M Ft.B.M	M Ft.B.M
Total .....	100.0	9,020	316,788	35.12	3,132	825	455	4,608
Hard Pine.....	24.4	2,198	72,105	32.80				
Oak .....	22.2	2,000	72,235	36.12				2,198
Pine .....	21.0	1,896	49,748	26.24	430	25		1,545
Ash.....	5.9	536	29,595	55.21	1,821	75		
Birch.....	5.9	535	16,575	30.98	128	60		348
					378	155		2
Douglas Fir.....	5.0	455	18,925	41.59				
Spruce .....	4.2	380	6,300	16.58			455	
Tulip .....	3.4	309	22,776	73.71		380		
Cherry .....	3.2	287	12,475	43.47				309
Rosewood.....	2.6	236	6,129	25.97	132			155
					131	105		
Maple.....	1.1	103	3,209	31.16				
Chestnut.....	0.4	40	800	20.00	78	25		
Mahogany.....	0.3	29	5,430	187.24	20			20
Hemlock.....	0.1	8	128	16.00	8			29
Elm.....	1	4	128	32.00	4			
Cottonwood.....	1	1	65	65.00				
Cedar.....	1	1	45	45.00				1
Hickory.....	1	1	70	70.00	1			
Ironwood.....	1	1	50	50.00	1			1

<sup>1</sup> Less than one tenth of one per cent.

The figures in table 6 include returns from manufacturers of passenger coaches, baggage, express and freight cars for steam railways, cars for electric lines, and the wooden parts of locomotives, such as running-boards, cab-seats and pilots. Nineteen kinds of wood were reported, with imported hard pine heading the list, forming almost one quarter of the total amount of material used. Hard pine is used for the sills of cars because of its strength and comparative lightness and the fact that it can be obtained in large sizes, clear of defects, and in sufficient quantities for the purpose. Douglas fir, which is now used only to the extent of five per cent, is employed

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for the same purpose and could be used more extensively, as innumerable tests have proved that there is practically no difference in the strength values of the two woods, and Douglas fir is probably the lighter. Oak and maple are used for cross-sills and bumpers; ash, elm, hickory and ironwood are used for framework; hard pine, spruce and maple, for flooring; basswood, tulip, cottonwood, cedar and chestnut, for body-work and veneer-lacking; pine, spruce and hemlock for freight-car boxes; birch (stained to imitate mahogany), cherry and mahogany for interior finish.

Material for framework is purchased in dimension sizes; for body-work, boxes and interior finish it is usually in the form of rough lumber up to two inches in thickness. Veneers of tulip for cross-banding and of birch and mahogany for finish are also used.

This industry uses 51.7 per cent of the cherry, or more than all the other industries combined. It also uses 24.4 per cent of the Douglas fir—more than any other one industry. Only the vehicle and musical-instrument makers use more tulip than the car manufacturers who take 10.3 per cent of the total at the high price of \$73.71.

These manufacturers buy good grades and pay an average price of \$35.12 a thousand for their lumber, which is above the general average. They pay a higher price than any other industry for their ash, cottonwood and ironwood. More than half of their material is imported; 34.7 per cent is purchased in Ontario; 9.2 per cent in Eastern Canada, and 5 per cent in British Columbia.

Cars and coaches built in Ontario are used on Canadian railways all over the Dominion, but more especially in Ontario and the western provinces.

TABLE 7—CHAIRS.

Foreign.	M Ft.B.M	Kind of Wood.	Per cent.	Quantity.	Value.	Average value.	SUPPLY BY REGIONS.			
							Ont.	Eastern Canada.	B.C.	Foreign.
				M Ft.B.M	\$	\$ cts.	M Ft.B.M	M Ft.B.M	M Ft.B.M	M Ft.B.M
	4,608									
	2,188									
	1,545									
	348									
	2									
		Total.....	100.0	9,597	266,118	27.73	6,881	684		2,032
		Elm.....	33.4	3,206	80,609	25.13	2,871	337		
		Beech.....	28.4	2,722	54,411	19.99	2,547			175
	309	Oak.....	19.7	1,886	87,661	46.48	217			1,669
	155	Maple.....	10.8	1,037	23,949	23.09	953			80
		Birch.....	6.6	631	15,809	25.05	293	188		
		Tulip.....	0.5	50	1,250	25.00				50
	20	Gum.....	0.3	30	900	30.00				30
	29	Chestnut.....	0.2	20	440	22.00				20
		Mahogany.....	0.1	8	939	117.38				8
		Ash.....	0.1	5	150	30.00		5		

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Chair manufacture has been separated from household-furniture manufacture because so many factories make chairs exclusively. These range from the cheap, rough, kitchen variety made of elm or beech to the more expensive hand-carved, parlour and office chairs of mahogany and quartered oak.

Ten kinds of wood are used in the industry. Elm, which leads on account of its cheapness and abundance, is used for cheaper grades of chairs and for the framework of more expensive ones. Beech is the cheapest hardwood in Canada and forms 28.4 per cent of the chair material. Oak is the most popular material for mission-style and office chairs. Maple, birch and ash are used for cheaper grades and framework, chestnut for veneer core, and gum and tulip for seats and backs. The material is purchased in all thicknesses from  $\frac{1}{8}$ -inch veneer to 3-inch plank. Very little veneer is used, as most of the parts of chairs have to be solid. Approximately seventy

one per cent of the material is purchased in Ontario, seven per cent in Quebec and twenty one per cent is imported. Almost 90 per cent of the oak used is purchased in the United States. Nine per cent of the beech consumed in Ontario was used in chair-making, manufacturers of miscellaneous products and of hardwood flooring alone exceeding this use. The field of trade of these commodities is largely in Canada and Newfoundland.

TABLE 8.-COFFINS, CASKETS AND SHELLS.

Kind of Wood.	Per cent.	Quantity.	Value.	Average value.	SUPPLY BY REGIONS.			
					Ont.	Eastern Canada	B.C.	Foreign
		M F. B. M.	\$	¢ cts.	M F. B. M.	M F. B. M.	M F. B. M.	M F. B. M.
Total.....	100 0	6,514	155,277	23 84	5,025	665		824
Pine.....	29 0	1,890	38,723	20 46	1,890			
Spruce.....	28 5	1,856	37,094	19 99	1,206	650		
Basswood.....	24 5	1,594	45,485	28 54	1,579	15		
Chestnut.....	8 4	545	11,760	21 58	50			495
Oak.....	5 8	377	16,425	43 57	55			322
Hemlock.....	3 1	200	3,400	17 00	200			
Birch.....	0 5	35	1,030	29 43	35			
Cedar.....	0 2	10	180	18 00	10			
Mahogany.....	0 1	7	1,180	168 57				7

The commodities manufactured by this industry include highly decorated caskets finished in natural wood, cloth-covered coffins, and rough boxes, shells, or shipping cases.

Coffins and shells form a large percentage of the product, as is shown by the quantities of pine, spruce, basswood and chestnut used by the industry. Oak, birch and mahogany together form only 6.4 per cent of the total amount of wood used and these are primarily casket woods. Pine and hemlock are used chiefly for rough boxes and shipping cases.

Nine kinds of wood were reported in all, chestnut and cedar being used chiefly on account of their durability in contact with the soil. A considerable quantity of quartered oak is used by the industry.

This material is practically all purchased in the form of inch lumber of the best grades. The general price paid of \$23.84 is close to the average paid by all the industries for their materials. Of this lumber 77.1 per cent is from Ontario, 10.2 per cent from eastern Canada, and 12.7 per cent is from the United States and foreign countries. Ninety per cent of the chestnut and 85 per cent of the oak come from the United States. Three other industries use more chestnut than the coffin manufacturers who take 13.3 per cent of the total amount. They pay average prices for all their material except cedar, which they buy at \$18, which is much below the general average of \$39.97. The field of trade is largely confined to the Dominion, although some Canadian caskets and coffins are shipped to the West Indies, British Guiana and other colonies.

TABLE D—SLACK COOPERAGE.

Kind of Wood.	Per cent.	Quantity.	Value.	Average value.	SUPPLY BY REGIONS.											
					Ont.	Eastern Canada	B.C.	Foreign								
		M. Ft. <sup>1</sup>	\$	cts.	M	Ft	B.M	M	Ft	B.M	M	Ft	B.M	M	Ft	B.M
Total.....	100.0	42,946	920,492	21.57	42,536		353									57
Elm.....	59.7	25,230	571,487	22.77	25,230											
Basswood.....	19.9	8,590	155,278	18.14	8,590											
Poplar.....	6.0	2,840	64,079	22.88	2,763		77									
Maple.....	5.3	2,206	48,555	21.24	2,286											
Spruce.....	3.0	1,307	27,916	20.67	1,082		225									
Beech.....	2.8	1,219	24,575	20.16	1,219											
Ash.....	1.2	524	11,221	21.42	524											
Pine.....	0.8	338	7,198	21.30	338											
Balsam Fir.....	0.7	321	6,388	19.90	321											
Birch.....	0.6	257	5,035	19.59	206		51									
Gum.....	0.1	57	1,347	23.63												57
Cedar.....		7	410	58.57	7											

<sup>1</sup> Less than one tenth of one per cent.

The cooperage industry is treated more fully in Bulletin 31 of the Forestry Branch, which contains the statistics for the whole of Canada. The figures in table 9 were derived from this bulletin.

Slack cooperage includes barrels for the shipping of dry products, such as lime, apples, flour, cereals and all products which do not require a water-tight container, and also includes nail kegs.

Twelve kinds of wood were used in this industry, all of them being used for staves. Gum, cedar, birch and balsam, fir were used exclusively for staves and not for hoops or heading. Hoops were made only of elm, spruce and basswood. Elm and poplar formed 86 per cent of the staves made in Ontario in 1911; basswood heading formed 47 per cent of the total, and elm formed 96 per cent of the hoops. Slack cooperage is one of Ontario's leading wood-using industries, coming sixth on the list with a total consumption of over 40,000,000 board feet of material annually.

The material is generally purchased in the log for staves and hoops, and in the form of bolts or lumber for heading. A single cord of heading-bolts measures 8 ft. x 4 ft. x 20 inches and a double cord 8 ft. x 4 ft. x 40 inches.

This is one of the few industries that purchase the greater part of their material in the rough form of logs and bolts. The material is largely purchased in Ontario (99.1 per cent) with a small percentage from Quebec and 57,000 feet of gum from the United States. The makers of slack cooperage use 20.4 per cent of the basswood, and 48.3 per cent of the elm used in Ontario, consuming more of these materials than any other industry. They also use 71.2 per cent of the poplar or more than all the other industries combined.

The average price per thousand for slack-cooperage stock is \$21.57, which is below the general average. These coopers buy the most expensive balsam fir and cedar and sell most of their products in the province, exporting a small quantity to the United States.

TABLE 10—TIGHT COOPERAGE.

Kind of Wood.	Per Cent.	Quantity.	Value.	Average value.	SUPPLY BY REGIONS.			
					Ont.	Eastern Canada.	B.C.	Foreign.
		M Ft.B.M	\$	\$ cts	M Ft.B.M	M Ft.B.M	M Ft.B.M	M Ft.B.M
Total.....	100.0	4,444	287,088	64.60	1,323			3,121
Oak .....	87.6	3,891	266,923	68.60	770			3,121
Elm. ....	5.0	223	7,158	32.10				
Ash .....	4.1	180	8,510	47.28				
Blackwood.....	3.3	148	4,440	30.00				
Pine. ....	1	2	57	28.50				

<sup>1</sup> Less than one tenth of one per cent.

Tight cooperage includes watertight barrels for containing whisky, wine, syrup, cider, vinegar and oils.

Of the five kinds of wood reported as having been used in this industry oak forms 87.6 per cent of the total. It is well known that white oak must be used for barrels to contain alcoholic liquids, which form a large percentage of the tight barrels manufactured. Eighty per cent of this oak is imported from the United States, and this importation forms 70.2 per cent of all the wood used in the industry. Barrels to contain oils can be made of metal; cider and vinegar can be bottled; syrup can be sold in cans or jars, but wood is necessary for aging and storing alcoholic liquids, although they are sold in bottles to the ultimate consumer. The supply of white oak in Canada is limited to groups of trees in farmers' woodlots and will not last for many years. The users of white oak barrels cannot rely on importations, as the foreign sources of material are being as rapidly depleted as the domestic. It is stated that some of the larger cooperages are contemplating the purchase of land for growing white oak for their own use in the future, but most of them seem satisfied to rely on the United States for their supply. The material is purchased in the log or in bolt form as with slack cooperage. Tight cooperages purchase 6.5 per cent of the oak used by Ontario's industries and pay the highest price for it.

In 1911 Canada imported over a hundred thousand barrels and over seven million oak staves which clearly indicates that the local cooperages cannot begin to supply the demand. The majority of the barrels used are either assembled in barrel factories, which import their stock readymade, or are assembled from imported stock in the factories of the users themselves. Such stock is not included in this report, which deals only with manufacturers who use raw material or rough lumber. The bulk of the tight cooperages sell their barrels locally and practically none of these barrels are exported, or even shipped out of the province.

TABLE 11—DAIRY MACHINERY.

Kind of Wood.	Per Cent.	Quantity.	Value.	Average value.	SUPPLY BY REGIONS			
					Ont.	Eastern Canada.	B.C.	Foreign.
		M Ft.B.M.	\$	\$ cts	M Ft.B.M.	M Ft.B.M.	M Ft.B.M.	M Ft.B.M.
Total .....	100 0	8,448	150,577	27 04	4,943			309
Basswood.....	30 2	1,044	43,533	26 48	1,044			
Maple.....	30 2	1,043	44,341	26 09	1,043			
Elm.....	30 1	1,040	46,130	28 13	1,040			
Cypress.....	8 3	450	13,848	30 77				450
Hard Pine.....	0 0	50	1,750	35 00				50
Pine.....	0 3	16	632	39 50	16			
Tulip.....	0 1	5	345	69 00				5

Under the heading of Dairy Machinery are included all such commodities as churns, butter-workers, butter-tubs, cream separators and machinery used in cheese-making. The basswood is used for butter-workers, maple for butter-moulds, elm and cypress for churns, white pine for covers, and tulip for butter-worker rollers and trays. Yellow pine is used for framework only.

Materials for this purpose must be both tasteless and odorless, which accounts for the extensive use of basswood, maple and elm. Tulip would be more popular but for its price, which is the highest of the seven kinds of wood used.

The material is purchased in the form of inch boards of medium grades, and comes chiefly from Ontario; only 9.3 per cent is imported from the United States, these imports consisting of cypress, hard pine and tulip.

This industry uses the most expensive white pine at \$39.50 a thousand. The bulk of this machinery is sold locally in the province or in the Dominion, but New Zealand, Australia, England and Italy are among the foreign countries to which Ontario dairy machinery is exported.

TABLE 12—FRUIT BASKETS AND CRATES.

Kind of Wood.	Per Cent.	Quantity.	Value.	Average value.	SUPPLY BY REGIONS			
					Ont.	Eastern Canada.	B.C.	Foreign.
		M Ft.B.M.	\$	\$ cts	M Ft.B.M.	M Ft.B.M.	M Ft.B.M.	M Ft.B.M.
Total .....	100 0	5,480	90,747	16 53	5,292	155		42
Elm.....	49 0	2,688	47,227	17 57	2,563	125		
Basswood.....	25 9	1,419	22,750	16 03	1,419			
Maple.....	10 5	576	9,887	17 13	576			
Pine.....	4 0	221	2,088	9 45	221			
Spruce.....	3 3	179	2,685	15 00	149	30		
Ash.....	3 0	163	2,934	18 00	163			
Beech.....	2 6	140	1,770	12 64	140			
Tulip.....	0 8	42	545	12 98				42
Birch.....	0 7	40	640	16 00	40			
Hemlock.....	0 2	11	121	11 00	11			
Poplar.....	0 2	10	120	12 00	10			

Fruit baskets and crates, berry boxes, cheese boxes and vegetable packages are all enumerated in Table 12.

Eleven kinds of wood were used in this industry, elm forming almost half of the total amount. Soft elm in the form of veneer or thin lumber is used for the sides, rims, hoops and handles of baskets and fruit boxes, and is also used exclusively for cheese-box sides. Basswood is made into covers and bottoms of baskets and crates, cheese heading and berry boxes. Maple is used for sides and bands of crates and for some cheese-box sides. Pine, spruce and tulip go into basket bottoms and cheese heading. Ash, beech, birch, hemlock, tulip and balsam poplar are made into fruit crates. The use of inferior species and of the veneers of more valuable ones is a good example of close utilization. While these industries use only about five and a half million feet of material annually, they have practically no waste.

The material is purchased either in the log, to be cut into veneer, or in the form of lumber or veneer already cut. The average price is low, at \$16.53, but the best grades are used in most cases. The material is purchased in Ontario to the extent of 96.4 per cent; 2.8 per cent comes from Eastern Canada and 0.8 per cent. (42,000 feet of tulip) is imported from the United States.

This industry uses the cheapest hemlock, pine, poplar and tulip. The output of the factories is sold locally in the province.

TABLE 13—HALF-TONE BLOCKS.

Kind of Wood.	Per cent.	Quantity.	Value.	Average value.	SUPPLY BY REGIONS.			
					Ont.	Eastern Canada.	B.C.	Foreign
		M Ft.B.M	\$	\$ cts.	M Ft.B.M	M Ft.B.M	M Ft.B.M	M Ft.B.M
Total.....	100.0	21	1,775	84.52	12	1		
Birch.....	52.4	11	915	83.18	11			
Mahogany.....	38.1	8	660	82.50				
Cherry.....	9.5	2	200	100.00	1	1		

This industry comes last on the list for quantity of material used annually, but pays the highest average price for its stock, namely, \$84.52 a thousand.

Four kinds of wood were used, of which birch formed 52.4 per cent, birch and mahogany together making up the bulk of the material. A few thousand square inches of boxwood were imported from the United States at a price of 4 to 5 cents per square inch for making wood-engravings. Mahogany is used for mounting engravings and cuts, for electrotypes, stereotyping and blocking, birch for blocking cut and mounting electrotypes, and cherry for mounting.

The material is all bought in the form of inch lumber and over half of it supplied by Ontario; about 5 per cent is purchased in Eastern Canada, and the mahogany, forming 38 per cent of the total, is all imported.

The prices of birch and cherry are the highest paid by any industry as only the best selected stock is used. The field of trade is confined to Canada.

TABLE 14—HANDLES.

Kind of Wood.	Per cent.	Quantity	Value	Average Value	SUPPLY BY REGIONS			
					Ont.	Eastern Canada.	B. C.	Foreign
		M Ft.B.M	\$	\$ c.	M Ft.B.M	M Ft.B.M	M Ft.B.M	M Ft.B.M
Total.....	100.0	6,907	207,156	29.99	4,538	200		2,169
Maple.....	39.4	2,722	62,229	22.86	2,302	200		220
Ash.....	24.0	1,638	71,741	43.27	798			840
Hickory.....	16.7	1,155	39,821	34.48	113			1,042
Basswood.....	5.8	399	8,326	20.87	399			
Beech.....	5.6	300	8,784	22.52	353			37
Elm.....	3.7	259	7,215	27.86	259			
Birch.....	2.9	200	4,400	22.00	200			
Oak.....	0.9	65	2,125	32.69	65			
Apple.....	0.6	43	2,005	46.63	43			
Cherry.....	0.2	11	385	35.00	6			5
Sycamore.....	0.1	5	125	25.00				5

Maple is the favourite material for the longer handles of hay-forks, brooms, canthooks and pike-poles. Ash is also used for these and for shorter handles of whisks, hammers and shovels. Hickory forms the bulk of the axe and hammer handles. Basswood, birch, beech and sycamore are used for small, short handles where great strength is not required. Elm and oak are used for heavy handles of agricultural implements such as plow and scutler handles. Apple is used for saw handles and mallets and cherry for handles of dies, seals and rubber stamps. For the more expensive handles where straight grain is imperative the material is purchased in the log and split into bolts. Other manufacturers purchase their bolts ready cut to suit the size of the handles they produce. For smaller stock lumber down to three eighths of an inch in thickness is used. About sixty five per cent of the wood used is purchased in Ontario. About three per cent (part of the maple) comes from Eastern Canada and about 32 per cent from the United States; from the last-named source comes also over ninety per cent of the hickory, the native supply fit for this purpose being almost exhausted. No better material than hickory has been found for axe and hammer handles and the manufacturers are at a loss to prepare for future supplies, as the American sources are also becoming rapidly depleted.

Handle factories consume all the apple wood used by Ontario's industries, and 31.3 per cent of the sycamore, (coming second to furniture factories in this respect) 12.1 per cent of the hickory (coming second to the manufacturers of vehicle supplies) and 13.7 per cent of the ash.

The average price paid for handle woods is \$29.99, which is above the general average. These manufacturers buy the cheapest sycamore and hickory, but their ash costs \$43.27, a price only exceeded by that paid by the car manufacturers. The more expensive grades of ash were used for shovel handles.

Ontario-made tools are shipped to the western provinces and other parts of the Dominion and are exported to Australia, South Africa, Argentina, New Zealand and Great Britain.

TABLE 15—HARDWOOD FLOORING.

Kind of Wood.	Per cent.	Quantity	Value	Average Value	SUPPLY BY REGIONS.			
					Ont.	Eastern Canada.	B.C.	Foreign
		M Ft B.M.	\$	\$ c.	M Ft B.M.	M Ft B.M.	M Ft B.M.	M Ft B.M.
Total.....	100.0	52,547	1,306,247	24.86	37,090	92		15,365
Maple.....	60.8	31,941	728,950	22.82	21,791	50		10,100
Birch.....	22.4	11,780	256,127	21.74	10,238	42		1,500
Beech.....	8.0	4,204	82,864	19.71	4,204			
Oak.....	7.6	3,968	221,326	55.78	203			3,765
Basswood.....	0.8	408	8,540	20.93	408			
Ash.....	0.4	220	7,900	35.91	220			
Elm.....	<sup>1</sup>	26	540	20.77	26			

<sup>1</sup> Less than one tenth of one per cent.

Hardwood flooring is separated from other planing-mill products because some mills make flooring exclusively, and the product, when tongued, grooved, end-matched and hollow-backed, is a more highly manufactured article than mere finished lumber. The flooring is finished in different thicknesses from three eighths of an inch to four inches, although the majority is seven eighths of an inch in thickness and of different lengths. Seven kinds of wood were used for the better class of flooring, maple and birch forming 83.2 of the total. Birch and beech on account of their cheapness are becoming more popular as the supply of oak and maple decreases. The most expensive flooring is three eighths of an inch, quarter-cut white oak, which goes as high as \$86.00 per thousand. Elm is used chiefly for stable flooring.

Thirty six per cent of the maple and thirty per cent of the birch used in Ontario go into hardwood flooring, no other industry using as much. Only the manufacturers of miscellaneous commodities use more beech than is used for flooring.

The material is purchased in the form of rough lumber by the factories that make flooring exclusively and in the size that best suits the thickness of the flooring to be turned out. Many planing mills connected with saw-mills make flooring as a sideline and use the rough lumber as it comes from the saw. The manufacture of hardwood flooring, as an industry, comes fifth on the list in Ontario with a total consumption of over fifty two and a half million feet of raw material. The average price paid for this was \$24.86, which was very little above the general average. Over 70 per cent of the lumber was purchased in Ontario, 0.2 per cent in Quebec and 29.2 per cent in the United States. The prices paid for different species were average ones in most cases. The product of the industry was sold almost exclusively in Canada.

TABLE 16—HOUSEHOLD FURNITURE.

Kind of Wood.	Per cent.	Quantity	Value	Average Value	SUPPLY BY REGIONS.		
					Ont.	Eastern Canada.	Foreign
	M Ft.B.M	\$	\$ cts.	M Ft.B.M	M Ft.B.M	M Ft.B.M	M Ft.B.M
Total...	100.0	37,070	1,133,884	30 59	26,245	513	10,312
Maple	35.6	13,202	313,384	23 74	12,502		700
Oak	18.8	6,975	366,703	52 57	604	60	6,311
Basswood	11.1	4,118	97,290	23 63	3,750	368	
Elm.	9.4	3,482	82,937	23 82	3,312		170
Birch	8.2	3,057	80,553	26 35	3,012	15	30
Gum.	6.4	2,361	60,921	25 80			2,361
Ash	3.0	1,110	22,454	20 23	1,055	50	5
Pine.	2.6	951	22,880	24 06	951		
Beech.	1.9	695	12,801	18 42	645	20	10
Chestnut	1.2	461	11,572	25 10	181		280
Mahogany	0.9	339	48,044	141 72			339
Spruce	0.4	134	2,412	18 00	134		
Tulip	0.2	85	4,623	54 39			85
Walnut	0.2	68	5,495	80 81	68		
Red Cedar	†	10	800	80 00			10
Sycamore	1	10	400	40 00			10
Cherry	1	6	350	58 33	5		1
Butternut	1	6	265	44 17	6		

† Less than one tenth of one per cent.

The furniture industry as a whole, including the manufacture of household furniture, office furniture, pianos, organs and players, chairs, tables, school, lodge and church furniture, kitchen cabinets and refrigerators consumes over eighty million feet of lumber annually. The household furniture branch of the industry uses over thirty seven million feet, coming seventh on the list. The commodities manufactured under this classification include bedroom furniture (beds, dressers, chiffoniers, bureaus, washstands, cheval stands and wardrobes), dining-room furniture (including sideboards, buffets, dinner-wagons, and china cabinets) and such general household furniture as couches, settees, divans, lounges, house-desks, bookcases, music and medicine cabinets, and hall clocks. Eighteen different kinds of wood are used in making this furniture, with seven hardwoods heading the list.

The wood used may be divided into two classes, according to where it is used in the final product. Woods for 'inside' work are used in making framework of furniture to be upholstered or covered, drawer parts, partitions, posts and backs and all parts of cheaper furniture. These woods are maple, basswood, elm, birch, gum, ash, pine, beech, spruce and butternut. The woods for 'outside' work, where appearance, grain and color are more important, are oak, black ash, chestnut, mahogany, walnut, cherry and butternut. In the manufacture of the better class of veneered furniture the core stock is usually chestnut with considerable quantities of black ash, basswood, soft maple, and tulip. The crossbanding, which is glued at right angles to the grain on both sides of the core-stock, is usually a thin veneer of tulip. The veneer proper is glued at right angles to the grain of the crossbanding on the face of the piece of furniture, and some cheap veneer of elm or tulip glued in a similar position to the back to counteract the shrinkage of the face veneer. This makes a total of five thicknesses of wood with their grains running at right angles and is a certain preventive of warping or shrinking. Furniture made in this way keeps its shape better than that of solid construction.

Red cedar is imported from the United States and made into nethermost wardrobes and chests, on account of its pungent odour.

Birch and gum are used to imitate, respectively, mahogany and walnut, and are then used for 'outside' work.

Household-furniture factories consume the bulk of the gum (56 per cent), sycamore (62.5 per cent) and red cedar (100 per cent) used in Ontario in a year. They use the second largest quantities of butternut, walnut and mahogany. Over twenty per cent of their material is imported, the imports consisting of the bulk of the oak and chestnut and all the gum, mahogany, tulip, red cedar and sycamore.

The raw material used is lumber, in all sizes and grades, and veneer, much of the oak being quarter-cut. The greatest part of the furniture is sold locally and the remainder in the Dominion and Newfoundland, little or none being exported.

TABLE 17—KITCHEN CABINETS.

Kind of Wood	Per cent.	Quantity	Value	Average Value	SUPPLY BY REGION			
					Ont.	Eastern Canada	B. C.	Foreign
		M Ft.B.M	\$	\$ c.	M Ft.B.M	M Ft.B.M	M Ft.B.M	M Ft.B.M
Total.....	100.0	1,129	28,962	25.65	967			162
Maple.....	60.2	680	15,664	23.04	680			
Basswood.....	14.0	158	4,063	25.72	158			
Oak.....	7.4	84	3,950	47.02	24			60
Gum.....	6.8	77	2,310	30.00				77
Ash.....	6.6	75	1,650	22.00	75			
Spruce.....	2.7	30	480	16.00	30			
Hard Pine.....	1.3	15	495	33.00				15
Cypress.....	0.9	10	350	35.00				10

The manufacture of kitchen cabinets and safes is a branch of the furniture industry which uses the cheapest materials. The woods are selected for utility, ease of working and permanency of shape, rather than for appearance. Eight woods were reported, with two of them, maple and basswood, forming three quarters of the total. Maple, oak, ash and hard pine are used for framework; basswood, cypress and spruce, for table-tops; gum for partitions and inside work, and oak (quarter-cut and plain) and black ash for face-work. This industry uses only a little over a million feet of material a year, coming seventh from the bottom of the list. The general average price paid for material was \$25.65, and the prices of each separate kind of wood were all average ones also. The import of raw material, all from the United States consisted of 162,000 feet, or 14.3 per cent of the total, comprising the largest proportion of the oak and all the gum, hard pine and cypress. The finished commodities are sold locally or in Canada, but not exported.

TABLE 18—LADDERS AND RUNGS.

Kind of Wood	Per cent.	Quantity	Value	Average Value	SUPPLY BY REGIONS.			
					Ont.	Eastern Canada.	B. C.	Foreign
					M Ft.B.M	M Ft.B.M	M Ft.B.M	M Ft.B.M
Total.....	100.0	347	10,993	\$ 31.68	192		2	153
Hard Pine.....	43.5	151	4,930	32.65				151
Elm.....	38.0	132	3,938	29.83	130			2
Pine.....	12.1	42	1,470	35.00	42			
Basswood.....	5.8	20	500	25.00	20			
Douglas Fir.....	0.6	2	95	47.50			2	

Lightness and strength are the essential qualities for wood to be used in the manufacture of ladders, whether ordinary building ladders, fire ladders, extension ladders or step ladders. Of the five woods used by the industry, hard pine leads with 43.5 per cent, on account of its strength and the fact that it can be obtained clear in long pieces. Imported hard pine and native red or Norway pine are used for the sides of extension ladders and for the longer step ladders. Douglas fir is used altogether for fire ladders, as it is lighter than hard pine and usually equal to it in strength. Soft elm and basswood are used for step ladders and rock elm for ladder rungs or rounds. The hard pine and red pine and Douglas fir are purchased as rough lumber from 1½ to 1½ inches in thickness, the soft elm and basswood as inch boards and the rock elm for rungs as 1½-inch rough boards. All the hard pine and two thousand feet of rock elm were imported from the United States, the Douglas fir came from British Columbia and the remaining 55.3 per cent of the material was bought in Ontario. This industry ranks next to last in quantity used but the prices paid for material are above the average. The majority of the ladders were sold in Ontario, Quebec and the Northwest.

TABLE 19—LAUNDRY ACCESSORIES.

Kind of Wood	Per cent.	Quantity	Value	Average Value	SUPPLY BY REGIONS.			
					Ont.	Eastern Canada.	B. C.	Foreign
					M Ft.B.M	M Ft.B.M	M Ft.B.M	M Ft.B.M
Total.....	100.0	4,490	129,507	\$ 28.84	2,311		60	2,119
Basswood.....	29.4	1,320	34,360	26.03	1,320			
Cypress.....	28.6	1,284	37,903	29.96				1,284
Hard Pine.....	12.2	550	20,900	38.00				550
Beech.....	11.5	515	12,185	23.62	325			190
Maple.....	10.0	451	12,451	27.61	356			59
Pine.....	2.6	115	4,223	36.72	115			
Birch.....	2.2	100	2,500	25.00	100			
Cedar.....	1.3	60	1,620	27.00				
Oak.....	1.1	50	2,000	40.00	50		60	
Elm.....	1.0	45	1,385	30.78	45			

This class of products may be divided into home laundry accessories and machinery used in power and steam laundries. The first division includes washing machines, mangles, wringers, wash-boards, tub-stands, wringing-boards, clothes-horses and curtain stretchers. The second division comprises all the heavy machinery used by a commercial laundry, such as steam mangle, power washing-machines, ironing tables and dry-rooms.

Basswood was used in greatest quantity and formed 29.4 per cent of the total, being all purchased in Ontario. Cypress was used to an almost equal extent forming 28.6 per cent of the total, all of which was, of course, imported.

Basswood was used on account of its quality in retaining its shape and the ease with which it can be worked. It, along with the white of the beech, was made chiefly into wash-boards and clothes-dryers. Cypress was used on account of its extreme durability for washing-machine lids, tubs, tanks and frames. Hard pine was used for other washing machine parts, with maple, beech, elm, pine and cedar. Maple alone was used for wringers and mangles.

While these manufacturers use only about four or a half million feet of material annually, they are the largest users of cypress with the exception of the sash and door factories, and pay one of the lowest prices for this wood. The material is purchased as lumber from one to two inches thick. Owing to the extensive use of cypress and hard pine, a large percentage is imported, together 47.2 per cent. The products of the factories are sold in Canada and exported to Australia, New Zealand, Great Britain, South Africa and the United States.

TABLE 20—MANUFACTURES

Kind of Wood.	Per cent.	Quantity.	Value.	Average value.	SUPPLY BY REGIONS.			
					Ont.	Eastern Canada.	B.C.	Foreign.
		M Ft.B.M.	\$	\$ ctn.	B.M.	M Ft.B.M.	M Ft.B.M.	M Ft.B.M.
Total.....	100.0	514	26,727	52.00	100	50		364
Oak.....	56.8	292	18,247	62.49				292
Birch.....	25.3	130	4,000	30.77	80	50		
Chestnut.....	9.7	50	1,000	20.00				50
Mahogany.....	4.3	22	2,980	135.45				22
Basswood.....	3.9	20	500	25.00	20			

Wooden mantles for coal or gas grates are properly a part of interior house finishing, but some factories produce this product alone, so they are made into a separate class. Six kinds of wood go to form the final product, with oak forming over half the total amount used in a year. A large percentage of this oak is quarter-cut and is used for face-work. Stained birch and mahogany are also used on account of color, grain or appearance. Chestnut is used for veneer cores, and basswood for carvings and turnings on account of its easy-working qualities. The industry as a whole uses about half a million feet of wood in the form of inch lumber, three-inch plank, and veneers of oak and mahogany. Approximately seventy per cent of the material (all the oak, chestnut and, of course, the mahogany) is imported. Birch and basswood are the only native woods used.

The manufacturers of tight cooperage alone pay a higher price for their oak than the mantle makers. The product is sold locally and in the Dominion, but not exported.

TABLE 21—MUSICAL INSTRUMENTS.

Kind of Wood.	Per cent.	Quantity.	Value.	Average value.	SUPPLY BY REGION.			
					Ont.	Eastern Canada.	B.C.	Foreign.
		M Ft.B.M	\$	\$ cts.	M Ft.B.M	M Ft.B.M	M Ft.B.M	M Ft.B.M
Total.....	100.0	12,027	459,664	38.22	7,556	895	50	3,526
Maple.....	15.7	1,883	59,427	31.56	1,687	130		66
Elm.....	15.0	1,801	54,048	30.01	1,301	500		
Basswood.....	13.6	1,640	46,248	28.20	1,522	108		10
Pine.....	13.3	1,595	55,139	34.57	1,405	20		170
Chestnut.....	9.5	1,141	30,168	26.44	184			957
Tulip.....	9.0	1,085	55,593	51.24	95			
Birch.....	8.6	1,032	34,624	33.55	993	15		960
Oak.....	6.1	731	44,211	60.48	146			24
Walnut.....	3.5	425	31,553	74.24				585
Spruce.....	3.1	375	13,715	36.57	148	122	50	425
Gum.....	1.0	126	5,006	39.73				55
Mahogany.....	0.9	114	26,462	232.12				120
Ash.....	1	50	1,400	28.00	50			114
Cherry.....	1	25	840	33.60	25			
Spanish Cedar.....	1	4	1,230	307.50				4

<sup>1</sup> Less than one tenth of one per cent.

Pianos form the bulk of the product of musical instrument factories in Ontario. Piano-players and organs, with benches and stools, also form a part of the product. Many factories manufacture keys and actions alone, while others confine their operations to case-making. Firms that buy parts and merely assemble them in their factories are not included in this bulletin.

Fifteen different woods are used in the industry in amounts of over one thousand feet. Two imported woods, ebony and grenadilla or cocowood, are used in making smaller wooden instruments, such as flutes, piccolos and clarinets, but, as these are used in very small quantities and purchased by the pound, they are not included in the tables.

Maple, elm, basswood and pine are used in approximately equal quantities and form together over half the total amount. These, with gum, birch and tulip, are used for the interior parts of pianos, organs and players, including the keys and actions, frame-work and inside case-work. Chestnut, black ash and tulip are used for core-stock; pine, gum and spruce for organ pipes; spruce for sounding-boards; and oak, walnut, mahogany, cherry and Spanish cedar for outside case-work, carvings, legs and moulding. The mechanical qualities of the different woods are understood and appreciated in this industry, and each material is used because its qualities fit it for some certain purpose. These manufacturers purchase only the best grades of wood and kiln-dry much of it themselves before using it in the final product. They use chestnut, tulip and walnut in greater quantities than any other industry.

The raw material is purchased in the form of lumber for case-work and actions, and as plank or dimension stock for frame-work, legs and posts. Some of the birch, walnut, oak, mahogany and maple is purchased as veneer for case-work and some tulip veneer is used for cross-banding.

The first four woods on the list, which form over half the total amount used, are native woods. Two thirds of the raw material comes from Ontario, 7.5 per cent is purchased in Eastern Canada and fifty thousand feet of Sitka spruce is brought from British Columbia for sounding boards. The remainder of the wood, 29.3 per

cent, is imported from the United States and tropical countries. Piano makers pay the highest prevailing prices for their imported woods, buying the most expensive gum, mahogany and Spanish cedar.

Canadian pianos and organs are sold all over the British Empire and in European countries.

TABLE 22—NOVELTIES.

Kind of Wood.	Per cent.	Quantity.	Value.	Average value.	SUPPLY BY REGIONS.			
					Ont.	Eastern Canada.	B.C.	Foreign.
		M Ft.B.M	\$	\$ cts.	M Ft.B.M	M Ft.B.M	M Ft.B.M	M Ft.B.M
Total . . . . .	100.0	1,520	40,415	26 59	1,452			68
Elm. . . . .	27.8	422	11,980	28 39	422			
Basswood. . . . .	25.8	392	11,185	28 53	392			
Maple. . . . .	13.9	212	5,500	26 23	212			
Beech. . . . .	13.4	204	4,159	20 39	204			
Birch. . . . .	12.0	182	3,492	19 13	182			
Gum . . . . .	3.9	60	1,680	28 00				
Oak. . . . .	1.6	24	1,058	44 08	24			60
Pine. . . . .	0.7	11	346	31 45	11			
Hickory. . . . .	0.4	6	550	91 67				6
Mahogany. . . . .	0.1	2	220	110 00				2
Walnut. . . . .	0.1	2	130	65 00	2			
Ash. . . . .	0.1	2	40	20 00	2			
Spruce . . . . .	0.1	1	25	25 00	1			

Toys and wooden articles of stationery are included under the caption of novelties. Thirteen kinds of wood are used in quantities of over one thousand feet, and two others, ebony and rosewood, are used in smaller amounts. Most of the products are made as side lines or as a means of waste utilization in wood-working factories, and the wood is not usually selected on account of any particular quality it may possess. The elm and basswood, which form over fifty per cent of the wood used, are made into childrens' toy vehicles, such as sleighs, express wagons and doll carriages, and childrens' toy furniture, chairs and tables. The oak, mahogany, walnut, ebony and rosewood are used for pen-racks, ink-stands, rulers and other desk fittings.

The materials are purchased in all forms and sizes and the greater part is what would otherwise be factory waste. Ninety five and a half per cent of the material is purchased in Ontario and four and a half per cent is imported. This industry buys the most expensive hickory, the bulk of which is used in making log and board rules.

TABLE 23—OFFICE AND STORE FURNITURE AND FIXTURES

Kind of Wood.	Per cent	Quantity	Value.	Average value	SUPPLY BY REGION			
					Ont.	Eastern Canada	B.C.	Foreign.
		M F. B. M	\$	¢	M F. B. M	M F. B. M	M F. B. M	M F. B. M
Total . . . . .	100.0	10,496	458,968	43.73	5,955	275		1,366
Oak	38.2	4,005	238,030	59.43				
Basswood	14.4	1,515	41,112	27.14	809	11		1,034
Pine	9.9	1,038	20,771	20.01	1,048			
Birch	9.4	988	32,160	32.55	868			
Chestnut	6.2	647	16,368	25.30	151			496
Maple	5.2	549	16,290	29.67				
Mahogany	3.8	403	56,713	140.73	549			
Beech	3.3	343	7,018	20.40				403
Elm	3.0	310	8,252	26.62				86
Ash	2.3	237	6,879	29.02	247			
Spruce	1.4	145	2,950	20.34				
Cherry	1.1	114	3,590	31.49	145			
Gum	0.7	75	1,950	26.00	69			45
Tulip	0.6	67	3,470	51.79				76
Cypress	0.5	49	2,635	53.78				67
Walnut	0.1	11	780	70.91				49
								11

This is another branch of the furniture industry and consists of the manufacture of desks, office chairs, filing cabinets, tables, bookcases and sections thereof, and such fixtures as partitions, shelves, show-cases, wall-cases, counters, bars and railings. Sixteen kinds of wood are used, practically the same as those used for household furniture. In this industry, however, oak leads, instead of maple, and forms 38.2 per cent of the total, being mostly quarter-cut. The products are usually of a superior class where only the best woods are used. Chairs, filing cabinets and fixtures are frequently made of solid material even of the more expensive woods. The best desks, however, have five-ply veneered tops, as this insures permanency of shape even more than a solid construction. The woods are used for 'inside' and 'outside' work and for core stock and crossbanding just as in the household-furniture industry. The cypress included is used in bar fittings and drip-boards and work-boards where the material is liable to come into contact with water.

This industry used 20.5 per cent of the cherry, coming second only to the car industry, and 15.7 per cent of the chestnut. These manufacturers used over a third of the mahogany brought into the province, more than any other industry. They imported more of their material than the household-furniture factories, only 56.7 per cent of the lumber being purchased in Ontario.

Canadian desks are exported to some extent, but most of the office furniture is consumed locally or throughout the Dominion.

TABLE 24—PATTERNS AND MACHINERY.

Kind of Wood.	Per Cent	Quantity.	Value.	Average value.	SUPPLY BY REGIONS.			
					Ont.	Eastern Canada.	B. C.	Foreign.
		M Ft.B.M.	\$	\$ cts.	M Ft.B.M.	M Ft.B.M.	M Ft.B.M.	M Ft.B.M.
Total .....	100.0	5,362	179,206	33.42	4,515	94	14	739
Pine .....	61.3	3,289	110,958	33.74	3,036	77		176
Maple .....	10.9	586	18,979	32.39	401	5		180
Hemlock .....	4.2	226	4,210	18.63	226			
Hard Pine .....	4.0	217	8,750	40.32				217
Birch .....	3.7	201	6,722	33.44	201			
Spruce .....	3.7	200	3,918	19.59	188	12		
Oak .....	3.4	184	7,023	38.17	153			29
Ash .....	3.2	171	8,698	50.87	109			62
Poplar .....	1.5	82	1,100	13.41	82			
Elm .....	0.9	50	1,407	28.14	42			8
Basewood .....	0.9	46	1,050	23.02	36			10
Cypress .....	0.6	33	2,065	62.58				33
Cherry .....	0.5	25	1,084	43.36	22			3
Hickory .....	0.3	15	1,220	81.33	10			5
Douglas Fir .....	0.2	13	656	50.46			13	
Tulip .....	0.2	12	492	41.00				12
Cedar .....	0.1	8	2	26.25	7		1	
Mahogany .....	0.1	4	65	163.75				4

Wood used for patterns, moulding boxes, flasks, follow-boards and foundry work generally and for parts of heavy machinery and for skids is all summed up in Table 24. Pine forms 61.3 per cent of the total, and over two million feet of this wood is used in making patterns. In fact, white pine is so well suited for this purpose that it is often known as 'pattern pine'.

Other woods used for this purpose are black ash and basswood, with cherry and mahogany for very fine work. A good pattern-wood must be soft, with a close, fine, straight grain, and must not warp or check after being worked into shape.

For moulding boxes, flasks, follow-boards and foundry boxes a poorer grade of material is used, hemlock, maple, pine, poplar and spruce predominating. Any strong sound timber does for making skids. Maple, birch and elm are used for heavy pieces, and red white and jack pine with hemlock, spruce and hard pine for lighter machinery. Oak, ash, hickory and Douglas fir are used for parts of heavy machinery, elevator frames and guide-strips, scale pillars, handles and framework of all kinds. Cypress is used for pulp machinery and tulip for flour machinery. Small amounts of walnut, teak and lignum-vitæ are used for electrical apparatus. Eastern and British Columbia cedar, cypress and white pine are also used for tan leaches and drums. Twenty one species, in all, go to form the total of over five million feet of lumber, one eighth of which is imported from foreign countries. This industry uses a good class of material, paying an average price of \$33.42 for the different kinds of woods used and buying the most expensive hard pine, cypress and maple. Patterns are used locally, but machinery is sold in all parts of Canada and exported to a large extent.

TABLE 25—PICTURE FRAMES AND MOULDINGS

Kind of Wood.	Per Cent.	Quantity.	Value.	Average value.	SUPPLY BY REGIONS			
					Ont.	Eastern Canada.	B.C.	Foreign.
		M Ft.B.M.	\$	\$ cts.	M Ft.B.M.	M Ft.B.M.	M Ft.B.M.	M Ft.B.M.
Total.....	100.0	1,012	33,085	32.69	759			253
Basswood.....	62.5	632	14,853	23.50	632			
Oak.....	23.7	240	14,080	58.67				240
Ash.....	5.3	54	1,458	27.00	54			
Elm.....	4.7	48	1,200	25.00	48			
Birch.....	2.5	25	1,000	40.00	25			
Gum.....	1.3	13	494	38.00				13

The making of picture frames and picture moulding might be considered as a part of the furniture industry, but some factories make this class of material alone. The industry is another of those which can be classed as factors in close utilization, as small pieces of wood, edgings, trimmings, and factory and saw-mill waste can often be used to advantage.

Basswood, birch and gum are used for the cheaper painted frames; for gilded or carved frames basswood is the favorite material. Quartered and plain oak, black ash and elm are used for stained or natural-finished frames.

Only six kinds of wood are used, but the total amount exceeds a million feet annually. Three quarters of the lumber is bought in Ontario and one quarter imported.

TABLE 26—PULLEYS.

Kind of Wood.	Per Cent.	Quantity.	Value.	Average value.	SUPPLY BY REGIONS			
					Ont.	Eastern Canada.	B.C.	Foreign.
		M Ft.B.M.	\$	\$ cts.	M Ft.B.M.	M Ft.B.M.	M Ft.B.M.	M Ft.B.M.
Totals.....	100.0	1,326	32,820	24.75	1,226			100
Maple.....	99.9	1,325	32,790	24.75	1,225			100
Rock Elm.....	0.1	1	30	30.00				

Wooden shaft-pulleys, split or solid, wooden blocks and sheaves and hay pulleys are included in this class. Maple forms the bulk of the material, of which over a million feet is used annually. For the rims of shaft pulleys soft maple is the favorite material, on account of its toughness and close grain, and the fact that it turns smoothly across the grain and glues well. It is also used for pulley blocks. Hard maple is used for the arms of shaft pulleys and for sheaves. Rock elm is used for hay pulleys. Only seven and a half per cent of this material is imported, the bulk of it coming from Ontario.

TABLE 27—WOOD-PULP.

Kind of Wood.	Per Cent	Quantity	Value.	Average value	SUPPLY BY REGIONS							
					Ont.	Eastern Canada	B.C.	Foreign				
		M F B M	\$	cts	M F B M	M F B M	M F B M	M F B M				
Total .....	100.0	119,496	1,503,236	12.58	108,486			11,010				
Spruce .....	90.4	108,031	1,344,386	12.45	97,978			10,053				
Balsam Fir .....	8.9	10,581	148,557	14.01	9,671			590				
Poplar .....	0.5	552	6,977	12.64	502			50				
Basswood .....	0.1	107	1,366	8.7	107							
Elm .....	0.1	165	1,350	8.18	165							

The statistics for pulpwood consumption in Ontario are given more fully in the annual bulletin on Pulpwood for 1911 (Forestry Branch Bulletin No. 30). This publication gives the figures for the whole of Canada and also discusses the pulp-making industry in detail. The figures in Table 27 were largely derived from this bulletin. Four species were used in making pulp in Ontario, but spruce, with 90.4 per cent of the total, forms the bulk of the wood used. Fifty-two per cent of the spruce was made into pulp by what is known as the mechanical process, where the wood is ground up mechanically and not treated or partially dissolved by chemicals. The remaining 47 per cent was made into chemical pulp by the sulphite process. Of the balsam fir, equal quantities were made into mechanical and sulphite pulp. Poplar was the only wood treated by the soda process and 85 per cent of the poplar was so used. Basswood and elm were made entirely into mechanical pulp and used mostly for fibre wall-boards.

Pulp manufacturers used 14.8 per cent of the total amount of wood used by the industries, coming second on the list with a consumption of over a hundred million board feet of raw material. They used practically all the balsam fir, the greater part of the spruce, and 13.8 per cent of the poplar used in the province. Only one other industry paid a lower average price for all its lumber than the pulp manufacturers. They bought the cheapest balsam fir, basswood, elm and spruce that were used by the industries.

All the material was purchased in Canada, 90.8 per cent coming from Ontario and 9.2 per cent from Eastern Canada. Pulpwood is bought by the cord in the form of round sticks four feet in length and of varying diameters. A cord measures 4 ft. x 4 ft. x 8 ft. and contains, on an average about 90 cubic feet, or approximately 554 board feet, of material. Ontario exported to the United States in 1911, 89,050 cords of pulpwood or approximately 49,333,700 feet, board measure. All this material was cut on private lands, as export of unmanufactured wood cut on Crown lands in Ontario is prohibited.

Canada exports large quantities of manufactured wood-pulp every year. In 1911 over 99 per cent of these exports went to the United States; about two thousand tons went to the United Kingdom and an odd eighty tons went to Newfoundland. The total exports amounted to over a quarter of a million tons.

TABLE 24—PUMPS, TANKS AND SILOS

Kind of Wood.	Per Cent.	Quantity.	Value.	Average value.	SUPPLY BY REGION			
					Ont.      Eastern Canada      B.C.      Foreign			
		M F. B. M.	\$	cts	M F. B. M.	M F. B. M.	M F. B. M.	M F. B. M.
Total.....	100.0	2,443	93,144	38.13	1,501	20	200	662
Pine.....	57.1	1,394	53,061	38.08	1,371	20		
Cypress.....	22.3	546	23,144	42.39				540
Douglas Fir.....	1.1	100	5,200	52.00			100	
Cedar.....	4.1	100	2,000	20.00			100	
Oak.....	3.6	87	4,185	48.10	33			54
Hard Pine.....	2.5	62	1,068	31.74				62
Spruce.....	2.3	56	1,232	22.00	56			
Hemlock.....	1.7	41	700	17.07	41			
Tamarack.....	1.4	35	1,065	31.00	35			
Elm.....	0.5	11	275	25.00	11			
Maple.....	0.4	10	279	27.90	10			
Birch.....	1	1	25	25.00	1			

† Less than one tenth of one per cent.

Pumps and parts thereof, tanks, cisterns, well curbing and covers, windmills, silos, vats and water troughs are all used more or less in contact with water and therefore must be made of durable woods. While white pine is only fairly durable it is easily worked and holds its shape well. Cypress, cedar, oak, tamarack and hard pine are all noted for durability in moist situations, and are used for all large water-containers.

Of the twelve woods used in this industry pine forms over half the total amount, and imported cypress comes second, with almost a quarter of the total. Spruce is used mostly for silos; hemlock for well curbing and covers; and elm, maple, birch and hard pine for pump-plungers and working parts, the logs and caps being made chiefly of white pine, cedar, or tamarack. Although pine is the wood most commonly used, this industry only consumes 0.8 per cent of the pine used by all the industries combined. The prices paid for lumber were high on the average and the grades of material were all of the best. Boards and plank up to four inches in thickness were purchased in most cases. Squares of pine from five to eight inches were used for pump-logs, and squares of the hardwoods from one to three inches for plungers and rods. Over sixty per cent of the material came from Ontario, 8.2 per cent from British Columbia, 0.8 per cent from Quebec, and 27.1 per cent from the United States.

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TABLE 29—REFRIGERATORS.

Kind of Wood.	Per Cent.	Quantity.	Value.	Average value.	SUPPLY BY REGIONS.			
					Ont.	Eastern Canada.	B.C.	Foreign
		M Ft.B.M	\$	\$ cts.	M Ft.B.M	M Ft.B.M	M Ft.B.M	M Ft.B.M
Total. ....	100.0	2,766	70,463	25 47	2,316	250		200
Ash. ....	30.9	855	24,750	28 95	680	175		
Spruce. ....	30.0	830	16,100	19 40	755	75		
Elm. ....	21.7	600	15,600	26 00	600			
Oak. ....	11.0	305	10,075	33 03	105			200
Pine. ....	4.3	120	2,240	18 67	120			
Birch. ....	1.8	50	1,500	30 00	50			
Chestnut. ....	0.2	6	198	33 00	6			

This is properly another branch of the furniture industry and might be included under kitchen furniture but for the fact that several factories specialize in these products. The class includes small refrigerators and ice-boxes and cold storages for stores, hotels and restaurants.

Black ash is the favorite material for outside finish in this industry, and makes up 30.9 per cent of the total quantity of wood used. Spruce is used for lining on account of its lack of taste and odor and forms 30 per cent, practically the same quantity as the ash. Soft elm, plain and quartered oak and birch are used for outside finish or framing and pine and chestnut for box-work and lining. The ash used by this industry forms seven per cent of the general total. Some ash and spruce are purchased in Quebec and 200,000 feet of oak is imported from the United States, but 83.7 per cent of the material is purchased in the province.

TABLE 30—SASH, DOORS AND INTERIOR TRIM.

Kind of Wood.	Per Cent.	Quantity.	Value.	Average Value.	SUPPLY BY REGION			
					Ont.	Eastern Canada.	B. C.	Foreign.
		M Ft.B.M	\$	\$ cts.	M Ft.B.M	M Ft.B.M	M Ft.B.M	M Ft.B.M
Total.....	100.0	252,444	6,207,830	24 59	218,139	8,684	563	25,058
Pine.....	43.0	108,446	3,064,684	28 26	105,130	1,873		1,443
Hemlock.....	28.5	72,014	1,175,947	16 33	70,214	875		925
Spruce.....	10.3	26,050	477,573	18 33	20,885	5,140		25
Hard Pine.....	6.0	15,097	468,121	31 01				15,097
Birch.....	2.9	7,312	171,472	23 45	7,082	230		
Oak.....	2.6	6,551	379,980	58 00	2,489			4,062
Basswood.....	2.0	5,044	114,392	22 68	4,758	236		50
Cypress.....	1.0	2,414	89,606	37 12				2,414
Beech.....	0.9	2,171	46,592	21 46	2,171			
Ash.....	0.7	1,874	57,087	30 46	1,569	245		60
Maple.....	0.6	1,513	35,213	23 27	1,473	40		
Chestnut.....	0.4	948	39,790	41 97	453			495
Cedar.....	0.3	780	18,085	23 19	649	20	111	
Tamarack.....	0.2	522	8,968	17 18	522			
Elm.....	0.2	462	11,087	24 00	437	25		
Douglas Fir.....	0.2	452	11,320	31 68			452	
Balsam Fir.....	1	233	3,539	15 19	233			
Gum.....	1	227	7,224	31 82				227
Tulip.....	1	216	12,224	56 59	45			171
Mahogany.....	1	89	10,880	122 25				89
Cherry.....	1	19	543	28 58	19			
Hickory.....	1	7	420	60 00	7			
Butternut.....	1	2	60	30 00	2			
Sycamore.....	1	1	32	32 00	1			

In this class, the largest and most important of all, are included practically all the planing mill and builders' factory products. This means all wood material used in house and building construction, with the exception of shingles, lath and roof timber purchased direct from the saw-mills.

The material can be roughly divided into general classes. Material for frame work, such as joists, studding, sills and roof stringers, forms one division, and for this hemlock is the chief material, with pine, spruce, yellow pine, Douglas fir and balsam fir. Foundation timber and verandah and pergola material must be made of durable wood, as it is used in moist situations and cypress, cedar and tamarack are largely used for this purpose. For outside work, such as siding, clapboarding, ridge-poles, shutters, blinds and storm doors and sash, pine is used in greatest quantity with hemlock, spruce, basswood, cypress and tamarack. Roof sheeting and side sheathing are made usually of the poorer grades of pine, hemlock or spruce. For all sorts of interior finish, such as doors, inside sash, stair-work, panelling, ceiling, cornice, base-boards and flooring, the cheaper woods such as pine, hemlock and spruce are used only when cheapness is the greatest consideration, and in such cases are usually painted or varnished and grained.

The more ornamental hardwoods, such as plain and quartered oak, black ash, maple, chestnut, soft elm, mahogany, cherry, butternut and sycamore, are used where the natural grain of the wood is exposed under varnish or stain. Yellow pine, birch, cypress, beech, Douglas fir and red gum are used for this purpose, either varnished, stained or painted. Basswood, gum, chestnut and tulip and the softer hardwoods are

used largely for cornice, panels and carved work. Hardwood flooring is separated and forms a class by itself.

This industry used 31.3 per cent of all the lumber used in Ontario in a year, in spite of the use of brick, stone, steel, cement and other wood substitutes in house construction and the use of wood-pulp in the form of fibre wall-boards.

This industry consumes over 250,000,000 feet of lumber annually, costing over six million dollars. It uses the largest quantities of ash, cedar, hard pine, hemlock, pine, cypress and tamarack, and purchases 86.5 per cent of its raw material in Ontario. Hard pine, oak and cypress are imported in the greatest quantities, but the imports amount to scarcely ten per cent of the total. The builders' factories pay moderate prices for their material, the average being \$24.59 a thousand. They buy the most expensive chestnut and the cheapest Douglas fir and tamarack. Many of the planing mills are run in connection with saw-mills and take their raw material as it comes from the saw. Others purchase rough lumber or dimension stuff and work it up in the factories for sash, doors and stair material.

Ontario exports large quantities of planing mill and builders' factory products to all parts of the world, in addition to supplying a large local demand.

TABLE 31—SCHOOL, LODGE AND CHURCH FURNITURE.

Kind of Wood.	Per Cent.	Quantity.	Value.	Average Value.	SUPPLY BY REGIONS.			
					Ont.	Eastern Canada.	B. C.	Foreign.
		M Ft.B.M	\$	\$ cts.	M Ft.B.M	M Ft.B.M	M Ft.B.M	M Ft.B.M
Total.....	100.0	2,144	56,752	26 47	1,308	180	.....	656
Pine.....	24.7	530	8,270	15 60	530	.....	.....	.....
Birch.....	20.5	439	8,251	18 79	278	15	.....	146
Oak.....	20.3	435	19,595	45 05	25	15	.....	395
Ash.....	17.6	377	10,999	29 18	247	125	.....	5
Elm.....	7.5	160	3,510	21 94	150	.....	.....	10
Spruce.....	3.1	67	972	14 51	42	25	.....	.....
Maple.....	2.4	51	1,375	26 96	1	.....	.....	50
Basswood.....	1.6	35	770	22 00	35	.....	.....	.....
Chestnut.....	1.4	30	810	27 00	.....	.....	.....	30
Mahogany.....	0.9	20	2,200	110 00	.....	.....	.....	20

Pine, birch, oak and ash, the first four woods in this industry, form together over eighty per cent of the total. Pine is used for the cheaper class of church pews and school seats. Birch is used mostly for school desks. Black ash, oak (plain and quartered), maple, chestnut and mahogany are used for decorative work of all sorts in church and lodge altars, pews, seats and hymn-boards. Basswood, chestnut and tulip are used for carvings and core stock. Boxwood, rosewood and ebony are employed in small quantities for inlaid work and for gavels, ballot-boxes and other small articles of lodge paraphernalia.

This is another branch of the furniture industry, uses the same materials in the same form and has approximately the same field of trade.

TABLE 32—SPORTING GOODS.

Kind of Wood	Per Cent.	Quantity.	Value.	Average Value.	SUPPLY BY REGIONS.			
					Ont.	Eastern Canada.	B. C.	Foreign
		M Ft.B.M	\$	\$ cts.	M Ft.B.M	M Ft.B.M	M Ft.B.M	M Ft.B.M
Total.....	00-0	1,870	70,091	37 48	1,355	60		455
Elm.....	7	705	23,950	33 97	5	60		
Maple.....	8	539	15,884	29 47	345			194
Ash.....	7	126	5,535	43 03	126			
Hard Pine.....		112	4,341	38 75				112
Tulip.....	0-0	94	3,376	35 91				94
Oak.....	3-3	65	3,250	50 00	65			
Basswood.....	2-9	55	1,650	30 00	55			
Birch.....	1-8	34	1,190	35 00	34			
Hickory.....	1-6	30	2,100	70 00	30			
Pine.....	1-6	30	660	22 00	20			10
Mahogany.....	1-3	25	5,625	225 00				25
Walnut.....	1-1	20	1,600	80 00	20			
Chestnut.....	1-1	20	660	33 00				20
Hemlock.....	0-8	15	270	18 00	15			

Materials used in making bowling alleys, billiard and pool tables, baseball bats, hockey and lacrosse sticks, billiard cues, toboggans, bicycle rims and gun stocks are included in Table 32 under the name of sporting goods.

Elm and maple form two thirds of the wood used and head the list of fourteen species. Rock elm is the best hockey-stick material, and over half a million feet of rock and white elm are used annually for this purpose. Maple is used chiefly for billiard cues and some toy baseball bats. Billiard tables are built like any other heavy table with a frame of oak, maple, hard pine or rock elm finished in quartered oak, black ash, mahogany or walnut, with inside work of birch, tulip or basswood and chestnut and tulip for core-stock.

Bowling alleys are built of maple, hard pine and hemlock. Second-growth white ash and hickory are supposed to be the best material for baseball bats and 30,000 feet of hickory are used annually for this purpose and for lacrosse sticks. Yellow birch for toboggans, maple for bicycle rims and walnut for gun stocks complete the list.

Nearly two million feet of material is used annually for this class of goods, and the prices on the whole are above the general average. The material is purchased in all forms, grades and sizes and in many respects closely resembles the handle-making industry, purchasing squares or billets for bats, hockey and lacrosse sticks and billiard cues. Billiard-table and bowling-alley material is purchased in the form of dimension stock, lumber or veneer. Maple, hard pine, tulip, mahogany, white pine and chestnut are imported to the extent of a quarter of the total consumption.

Hockey and lacrosse sticks are exported to all parts of the Empire, but the heavier articles are made for home consumption and are sold in Canada only.

TABLE 33—TABLES.

Kind of Wood.	Per Cent.	Quantity.	Value.	Average Value.	SUPPLY BY REGIONS.			
					Ont.	Eastern Canada.	B. C.	Foreign.
		M Ft.B.M	\$	\$ cts.	M Ft.B.M	M Ft.B.M	M Ft.B.M	M Ft.B.M
Total.....	100.0	5,164	195,882	37 93	2,760	32		2,372
Oak.....	39.0	2,012	111,702	55 52	135	32		1,845
Maple.....	26.6	1,373	36,170	26 34	1,073			300
Beech.....	11.8	611	13,290	21 75	611			
Birch.....	9.5	492	13,488	27 41	492			
Elm.....	4.2	215	4,825	22 44	215			
Basswood.....	3.3	171	4,335	25 35	171			
Cypress.....	1.4	70	1,850	26 43				70
Ash.....	1.2	63	1,897	30 11	63			
Chestnut.....	1.0	50	1,200	24 00				50
Gum.....	0.7	37	1,360	36 70				37
Mahogany.....	0.7	35	4,100	117 14				35
Hard Pine.....	0.6	30	990	33 00				30
Walnut.....	0.1	5	675	135 00				5

Under this branch of the furniture industry are included office and store tables, parlour, library and bedroom tables and kitchen tables. Oak furniture is fashionable now, just as walnut and cherry were a few years ago, and oak forms almost two fifths of the material used in table-making.

For the best class of tables, the tops are made of oak, preferably quarter-cut, or of black ash, soft elm, mahogany or walnut, with birch and gum stained to imitate mahogany and walnut. The framework and inside parts are made of maple, beech, birch, elm or ash, and the legs and any parts that show in the finished product are usually of the same material as the top. Basswood and cypress are used for the tops of black ash, soft elm, mahogany or walnut, with birch and gum stained to imitate used for core-stock in veneered table-tops.

The greater part of the material for tops is purchased in the form of inch boards, while framework is made from boards or plank. Legs are turned out of squares or small dimension stuff. Half the table material is imported, ninety per cent of the oak coming from the United States. The same country also supplies some of the maple and all the cypress, chestnut, gum, hard pine and walnut.

The industry buys the cheapest cypress at \$26.43 a thousand, and exports its products to all parts of the Empire.

TABLE 34—VEHICLES, SLEIGHS AND AUTOMOBILES.

Kind of Wood	Per cent.	Quantity	Value	Average Value	SUPPLY BY REGIONS.			
					Ont.	Eastern Canada.	B. C.	Foreign.
		M Ft.B.M	\$	\$ c.	M Ft.B.M	M Ft.B.M	M Ft.B.M	M Ft.B.M
Total.....	100.0	15,597	591,009	37.89	8,960	705	16	5,916
Basswood.....	17.2	2,675	73,707	27.55	2,327	148		200
Oak.....	13.1	2,037	112,427	55.19	1,278	18		741
Elm.....	11.9	1,859	81,257	25.57	1,710	79		70
Ash.....	11.1	1,726	77,687	45.01	1,065	17		644
Maple.....	8.3	1,289	34,186	26.51	983	206		100
Gum.....	6.7	1,041	33,722	32.39				1,011
Hard Pine.....	6.3	987	28,138	28.51				987
Tulip.....	6.1	954	53,114	55.68	90			864
Birch.....	5.2	814	23,922	29.39	476	213		125
Cottonwood.....	5.0	776	42,127	54.29	50			726
Pine.....	4.0	619	16,584	26.79	619			
Hickory.....	3.2	500	32,161	64.32	125	15		360
Spruce.....	1.0	159	3,481	21.89	153	5	1	
Hemlock.....	0.3	46	822	17.87	42	4		
Cherry.....	0.3	42	2,955	94.17	5			37
Douglas Fir.....	0.1	15	825	55.00			15	
Beech.....	1	14	265	18.93	14			
Mahogany.....	1	12	1,630	135.83				12
Poplar.....	1	10	350	35.00	10			
Cypress.....	1	9	330	36.67				9
Ironwood.....	1	6	120	20.00	6			
Tamarack.....	1	2	40	20.00	2			
Cedar.....	1	2	100	50.00	2			
Balsam Fir.....	1	1	18	18.00	1			
Butternut.....	1	1	19	19.00	1			
Walnut.....	1	1	42	42.00	1			

<sup>1</sup> Less than one tenth of one per cent.

This industry uses more different kinds of wood than any other, and in most cases the material is used because of its physical properties, such as strength, toughness, or elasticity, and because it has been found to serve the purpose better than any other material. In few other industries are the qualities of different woods so well understood and appreciated.

The products manufactured are heavy vehicles, such as lorries, wagons, carts, coaches, drags, bob-sleighs and logging-sleighs. Light vehicles include buggies, sulkies, cabs, carriages, hearses, casket wagons and light sleighs and cutters. The wooden parts of automobiles, artillery wagons and gun carriages are also included and might be classed as heavy vehicles.

Many of the carriage and vehicle factories buy their gear-stock from factories which specialize in vehicle supplies. (See Table 35.) When this is done, the factory assembles the gear parts and itself manufactures only the box or top parts of the vehicle. This probably accounts for the large percentage of basswood used by this industry, as basswood is a favourite material for panels, boxes and top parts and forms 17.2 per cent of the wood used. The other materials used largely for this purpose are gum, tulip, cottonwood, pine, spruce, hemlock, beech, cypress, balsam fir, balm, poplar and cedar.

Cherry, mahogany, butternut and walnut are used for decorative work on hearses and casket wagons or in automobile bodies.

Yellow pine, tamarack and Douglas fir are used for poles, reaches, and hay and stock-racks, and ironwood for spokes and whiffletrees. The other woods, oak, elm, ash, maple, birch and hickory, are used for gear-stock and vehicle supplies, and will be more fully described in Table 35.

This industry leads in consumption of cotton-wood, and comes second in its use of gum and tulip. The box and body material is purchased in the form of rough lumber. The prices for all kinds of material are fairly high, and the best grades are used in most cases. The industry buys the most expensive Douglas fir and poplar, and the cheapest butternut, hard pine and walnut. Canadian vehicles are sold throughout the Empire and exported to foreign countries.

TABLE 35—VEHICLE SUPPLIES.

Kind of Wood	Per cent.	Quantity	Value	Average Value	SUPPLY BY REGIONS.			
					Ont.	Eastern Canada.	B. C.	Foreign.
		M Ft.B.M	\$	\$ c.	M Ft.B.M	M Ft.B.M	M Ft.B.M	M Ft.B.M
Total.....	100.0	21,292	1,109,866	52.13	6,613	564		14,115
Oak.....	48.6	10,358	544,947	52.61	3,839	307		6,212
Hickory.....	34.3	7,305	454,598	62.22	285			7,020
Maple.....	6.5	1,380	40,312	29.21	1,280			100
Elm.....	4.0	858	26,609	31.01	591	167		100
Birch.....	3.8	800	25,504	31.88	90	90		620
Ash.....	2.4	516	16,809	32.58	453			63
Pine.....	0.4	75	1,037	14.49	75			

In this industry all parts of a vehicle, except the body or box, are manufactured and sold to vehicle factories to be assembled. Gear-stock refers primarily to wheels, axles, sills, reaches and hounds. Another class of vehicles supplies is known as 'trees and pole' and consists of the wagon-pole, with singletrees, double tree and neck-yoke. In addition to these the industry turns out shafts, whiffletrees, sleigh runners, bol-sleighs, bunks and side-bars. The industry consumes more wood than the vehicle factories proper, and comes ninth on the list with over 21,000,000 feet of lumber.

Seven species are listed, oak leading with almost half the total quantity. The bulk of the oak goes into spokes, bent rims, bolsters and tongues for heavy wagons and lorries. Hickory is the favourite for lighter spokes and rims or feloes and for shafts and light poles. It is also used for automobile spokes and rims. Maple is undoubtedly the best material for axles, rock elm and birch for hubs, and ash for poles.

Spokes are often purchased in the rough form of billets. Hubs are bought in tree-sections with the centres bored out. Rims and shafts are steam bent; poles, reaches, bunks and the heavier parts are cut or turned from selected dimension stock.

This industry consumes over three quarters of the hickory used in Ontario, and also buys 17.2 per cent of the oak, coming second only to the manufacturers of miscellaneous products in this respect. Few industries import a greater percentage of their material than the manufacturers of vehicle supplies. They buy two thirds of their material in the United States, importing the bulk of their oak, hickory and birch, although birch is Canada's chief hardwood. The product is sold locally to carriage factories and much of it is also exported. Canadian gear stock is very popular in Australia.

TABLE 36—WOODENWARE.

Kind of Wood	Per cent.	Quantity	Value	Average Value	SUPPLY BY REGIONS.			
					Ont.	Eastern Canada.	B. C.	Foreign.
		M Ft.B.M	\$	\$ c.	M Ft.B.M	M Ft.B.M	M Ft.B.M	M Ft.B.M
Total.....	100.0	5,461	97,550	17.86	5,411			50
Pine.....	43.2	2,361	37,646	15.94	2,361			
Maple.....	28.3	1,546	30,521	19.74	1,546			
Basswood.....	21.6	1,179	21,098	17.89	1,179			
Cedar.....	2.4	131	2,195	17.76	131			
Birch.....	1.1	62	1,558	25.13	62			
Cottonwood.....	0.7	40	1,040	26.00				40
Beech.....	0.7	40	735	18.38	40			
Hemlock.....	0.6	34	792	23.29	34			
Elm.....	0.6	31	725	23.39	31			
Poplar.....	0.3	15	225	15.00	15			
Tulip.....	0.2	13	790	60.77	3			10
Cherry.....	0.2	9	225	25.00	9			

The bulk of the product of this industry is made up of bakers' woodenware, such as bread-boards, racks and proofs, dough troughs and bakers' peels. It also includes spools and bobbins, pails and tubs and other small articles made entirely of wood.

Pine, maple and basswood are used in greatest quantities making up over 93 per cent of the total of the twelve woods used. Bakers' woodenware is made mostly of cottonwood, basswood, tulip and maple. Spools and bobbins are made of birch, beech, basswood and hard maple. Basswood, cedar and white pine are made into pails and tubs.

In many cases the material is purchased in the form of lumber, but the smaller articles are usually made as side lines in other wood-working establishments and are simply means of utilizing small waste pieces. Fifty thousand feet, or scarcely one per cent of the material, is purchased outside of Ontario. This consists of cottonwood and tulip only.

TABLE 37—MISCELLANEOUS.

Kind of Wood	Per cent.	Quantity	Value	Average Value	SUPPLY BY REGION.			
					Ont.	Eastern Canada.	B. C.	Foreign.
		M Ft.B.M	\$	\$ c.	M Ft.B.M	M Ft.B.M	M Ft.B.M	M Ft.B.M
Total.....	100.0	56,714	515,878	9.10	35,453	700	400	155
Beech.....	28.6	16,213	129,924	8.01	16,213			
Maple.....	28.6	16,205	129,694	8.00	16,205			
Oak.....	19.2	10,962	90,916	8.34	10,802			100
Birch.....	14.3	8,102	64,816	8.00	8,102			
Ironwood.....	4.8	2,700	21,600	8.00	2,700			
Pine.....	1.6	909	29,023	31.93	603	306		
Basswood.....	1.0	554	15,230	27.49	554			
Douglas Fir.....	0.7	400	21,008	52.52			400	
Spruce.....	0.7	400	7,600	19.00		400		
Poplar.....	0.4	253	2,795	15.00	253			
Chestnut.....	0.1	50	1,500	30.00				50
Willow.....	1	20	360	18.00	20			
Tulip.....	1	5	400	80.00				5
Cherry.....	1	1	12	12.00	1			

<sup>1</sup> Less than one tenth of one per cent.

Whenever less than three manufacturers make one class of product or where commodities cannot be grouped or treated separately they are included in this class.

A large part of the material is used for wood distillation in the manufacture of charcoal, wood alcohol, grey acetate of lime and other wood chemicals. This industry uses hardwoods, such as maple, beech, oak, birch and ironwood, and buys its material by the cord. Matches are made of white pine and basswood; wooden pipes of spruce and Douglas fir, wooden taps of cherry, artificial limbs of willow, hat blocks of tulip, wood matting of beech, sewing machines of oak and chestnut, and awning rollers, poles and other small commodities out of small waste material of every description.

This group of industries comes fourth on the list with a total consumption of over fifty-six and a half million feet of raw material, making up seven per cent of the total consumption of wood used by the industries. The manufacturers of these miscellaneous products consume the greatest quantities of beech, ironwood and oak and all the willow used in Ontario.

They buy 97.8 per cent of the material in Ontario, importing only a little oak, chestnut, and tulip. They purchase the cheapest wood of all the industries, and buy the least expensive beech, birch, cherry, ironwood, maple and oak, but the most expensive tulip.

TABLE 35—WILLOWWARE.

Material.	Quantity used.	Value.	Average Value
		\$	\$ c
Willow.....	266,000 lbs.	9,225	0.035
Rattan.....	38,908 "	3,657	0.004
Reed.....	3,000 "	600	0.200
Rush.....	67,000 yds.	335	0.005
Bamboo.....	21,500 poles	1,398	0.065

Wickerwork is a general term for all commodities made of plaited or woven withes or reeds. The products so manufactured include furniture and baskets of all descriptions. The material is not purchased by any standard that can be converted into board feet, and on this account the statistics for this industry are not included in the summaries. Willow is used for the cheaper baskets and furniture and is largely native-grown. Many manufacturers of these products own small willow farms which yield about four tons of green willow per acre annually. Some willow is imported from England.

Reed is the core of rattan after the cane or bark is stripped off. The rattan is grown in the South Sea Islands and shipped to the United States or Germany, where it is made into reed and shipped in bundles to the manufacturers. Reed is made into fancy baskets, cradles, bassinets, stands, coffins, tables, chairs and other light furniture. The cane when stripped off the core is used for weaving into chair-seats, and for binding furniture. Rattan is also used for handles for leather goods, shawl-straps, whips, and for re-inforcing shin-guards and gauntlets.

Rush is used for chair seats and bamboo for whip-handles and light furniture.

### PROPORTION OF KINDS OF WOOD USED BY INDUSTRIES.

Table 'D' has been compiled for the purpose of showing to what extent each of the thirty four kinds of wood is used by the different industries. The sign ' following a figure in the table indicates that the industry purchased the greatest percentage

TABLE 'D'

PERCENTAGES OF DIFFERENT KINDS OF WOOD USED IN ONTARIO BY VARIOUS INDUSTRIES.

Kind of Wood.	Agricultural Imple-ments.	Bee-keepers' Supplies	Boats.	Boxes.	Brushes	Cars.	Chairs.	Coffins.	Coop-erage. (slack).	Coop-erage. (tight).
Apple.....										
Ash.....	9.0		0.2	3.8	0.1	4.4			4.3	1.5
Balsam Fir.....		0.2	1.0	14.4	0.1	0.6		3.8	2.9	
Basswood.....	3.0		1.0	0.5	0.1		9.1		20.4	0.4
Beech.....	0.8								4.1	
Birch.....	2.5			0.5	0.4	1.4	1.6		0.7	
Butternut.....			85.9							
Cedar.....	1.9		26.6	1.9				0.6	0.7	
Cherry.....			2.5			51.7				
Chestnut.....	0.1		0.2	2.2		1.0	0.5	13.3		
Cottonwood.....	1.0			2.8		0.1				
Cypress.....	1.1									
Douglas Fir.....			2			24.4				
Ebony.....					10.0					
Elm.....	4.8			9.6	0.6		6.1		48.3	0.4
Hum.....	1.4			1.2			0.7		1.4	
Hard Pine.....	20.0			2.9		8.0		0.3		
Hemlock.....										
Hickory.....	5.3									
Ironwood.....										
Mahogany.....			5.9		0.4	2.4	0.7	0.6		
Maple.....	4.9		0.2	0.9	0.3	0.1	1.2		2.6	
Oak.....	3.7		0.9			3.3	3.1	0.6		6.5
Pine.....	1.0	0.2	0.4	26.7		1.1		1.1	0.2	
Poplar.....				5.7					71.2	
Red Cedar.....				93.2						
Spanish Cedar.....			2.9							
Spruce.....			0.1	9.2		0.2		1.2	0.8	
Sumac.....			100.0							
Sycamore.....										
Tamarack.....	0.8		5.4							
Tulip.....	1.7		0.3			10.3	1.7			
Walnut.....			1.5							
Willow.....										

<sup>1</sup>Greatest quantity purchased.

<sup>2</sup>Less than one tenth of one per cent.

of the particular kind of wood. The sign <sup>2</sup> in a blank space indicates the fact that the industry used less than one tenth of one per cent of the wood.

Other blank spaces indicate that the industry did not use the wood at all.

TABLE 'D'—Continued.

PERCENTAGES OF DIFFERENT KINDS OF WOOD USED IN ONTARIO BY VARIOUS INDUSTRIES.

Kind of Wood.	Dairy Machinery.	Fruit Baskets.	Half-tone Blocks.	Hand-les.	Hard-wood Floor-ing.	House-hold Furni-ture.	Kit-chen Cabi-nets.	Lad-ders.	Laun-dry Acces-sories.	Man-tles.
Apple.....				100.0						
Ash.....		1.3		13.7	1.8	0.2	0.6			
Balsam Fir..										
Basswood.....	3.9	3.4		0.9	1.0	9.8	0.4		3.1	
Beech.....		0.5		1.3	14.0	3.2			1.7	
Birch.....		0.1								
Butternut.....				0.5	30.5	7.0			0.3	0.3
Cedar.....						9.4				
Cherry.....			0.4	2.0		1.1			3.8	
Chestnut.....						11.2				1.2
Cottonwood.....										
Cypress.....	8.8						0.2		25.0	
Douglas Fir..								0.1		
Ebony.....										
Elm.....	3.1	5.1		0.5		6.7		0.3	0.1	
Gum.....						56.0	1.8			
Hard Pine.....	0.2						0.1	0.6	2.0	
Hemlock.....										
Hickory.....				12.1						
Ironwood.....										
Mahogany.....			0.7			28.4				1.8
Maple.....	1.9	0.6		3.1	36.0	14.9	0.8		0.5	
Oak.....				0.1	6.6	11.6	0.1		0.1	0.5
Pine.....		0.1				0.5			0.1	
Poplar.....		0.3								
Red Cedar.....						100.0				
Spanish Cedar.....										
Spruce.....		0.1				0.1				
Sumac.....										
Sycamore.....				31.3		62.5				
Tamarack.....										
Tulip.....	0.2	1.4				2.8				
Walnut.....						12.6				
Willow.....										

<sup>1</sup>Greatest quantity purchased.

<sup>2</sup>Less than one tenth of one per cent.

TABLE 'D'—Continued.

PERCENTAGES OF DIFFERENT KINDS OF WOOD USED IN ONTARIO BY VARIOUS INDUSTRIES.

Kind of Wood.	Musical Instru- ments	Novel- ties	Office Furni- ture	Patterns	Picture Frames	Pulleys	Pulp.	Pumps and Tanks	Refrig- erators
.....	0.4	?	2.0	1.4	0.4		95.0 <sup>1</sup>		7.0
.....	3.9	0.9	3.6	0.1	1		0.4		
.....		0.7	1.1						
Birch.....	2.7	0.5	2.6	0.5	1			?	0.1
Butternut.....									
Cedar.....				0.5				6.3	
Cherry.....	4.5		20.5	4.5					
Chestnut.....	27.7 <sup>1</sup>		15.7						0.1
Cottonwood.....									
Cypress.....			1.0	0.6				10.6	
Douglas Fir.....				0.7				5.4	
Ebony.....									
Elm.....	3.4	0.8	0.6	0.1	0.1	1	0.3	?	1.1
Gum.....	3.0	1.4	1.8		0.3				
Hard Pine.....				0.8				0.2	
Hemlock.....				0.3				0.1	
Hickory.....		?		0.2					
Ironwood.....									
Mahogany.....	9.6	0.2	33.8 <sup>1</sup>	0.3					
Maple.....	2.1	0.2	11.6	0.7		1.5		?	
Oak.....	1.2	?	6.6	0.3	0.4			0.1	0.5
Pine.....	0.9	?	0.6	1.9				0.8	0.1
Poplar.....				2.1			13.8		
Red Cedar.....									
Spanish Cedar.....	3.9								
Spruce.....	0.2	?	0.1	0.1			70.0 <sup>1</sup>		0.5
Sumac.....									
Sycamore.....									
Tamarack.....								5.9	
Tulip.....	36.2 <sup>1</sup>		2.2	0.4					
Walnut.....	78.7 <sup>1</sup>	0.4	2.0						
Willow.....									

<sup>1</sup>Greatest quantity purchased.<sup>2</sup>Less than one tenth of one per cent.

TABLE 'D'—*Concluded.*

PERCENTAGES OF DIFFERENT KINDS OF WOOD USED IN ONTARIO BY VARIOUS INDUSTRIES.

Refrigerators.	Kind of Wood.	Busb and Doors.	School Furniture.	Sporting Goods.	Tables.	Vehicles.	Vehicle Supplies.	Wooden-ware.	Miscellaneous.
7-0	Apple								
	Ash	15.5 <sup>1</sup>	3.1	1.0	0.5	14.3	4.3		
	Balsam Fir	2.1							
	Basswood	12.0		0.1	0.4	6.4		2.4	1.3
	Beech	7.3			2.0			0.1	54.2
0-1	Birch	18.9	1.1		1.3	2.1	2.1	0.2	21.0
	Butternut	3.1				1.6			
	Cedar	49.0 <sup>1</sup>				0.1		8	
0-1	Cherry	3.4				7.0		1.6	0.2
	Chestnut	23.0	0.7	0.5	1.2				1.2
	Cottonwood					88.5 <sup>1</sup>		4.6	
	Cypress	47.1 <sup>1</sup>			1.4	0.2			
	Douglas Fir	24.2				0.8			21.5
1-1	Ebony								
	Elm	0.9	0.3	1.4	0.4	3.6	1.6	0.1	
	Gum	5.4			0.9	24.7			
	Hard Pine	55.1 <sup>1</sup>		0.4	0.2	3.6			
	Hemlock	96.3 <sup>1</sup>				0.1			
	Hickory			0.3		5.2	70.6 <sup>1</sup>		
	Ironwood					0.2			99.7 <sup>1</sup>
	Mahogany	7.5	1.7	2.1	2.9	1.0			
0-5	Maple	1.7	0.1	0.6	1.5	1.5	1.6	1.7	18.3
0-1	Oak	10.9	0.7	0.1	3.3	3.4	17.2		18.1 <sup>1</sup>
	Pine	61.8 <sup>1</sup>	0.3			0.4		1.3	0.5
	Poplar					0.3		0.4	6.3
	Red Cedar								
0-5	Spanish Cedar								
	Spruce	16.8				0.1			
	Sumac								
	Sycamore	6.2							
	Tamarack	87.6 <sup>1</sup>				0.3			
	Tulip	7.2		3.1		31.8		0.4	0.2
	Walnut			3.7	0.9	0.2			
	Willow								100.0

<sup>1</sup>Greatest quantity purchased.<sup>1</sup>Less than one tenth of one per cent.

## SUMMARY OF AVERAGE PRICES.

Table 'E' shows, in summary form, the average prices paid by each of the thirty-seven classes of industries, for each of the thirty kinds of wood. The sign <sup>1</sup>

TABLE 'E'

SUMMARY OF AVERAGE PRICES OF DIFFERENT KINDS OF WOOD.

Kind of Wood.	Agri- cultural Imple- ments	Bee- keepers' Supplies	Boats.	Boxes.	Brushes	Cars.	Chairs	Coffins.	Coop- erage (Slack)	Coop- erage (Tight)
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Apple.....										
Ash.....	42 33		35 40	16 61 <sup>1</sup>	25 00	55 21 <sup>1</sup>	30 00		21 42	47 28
Balsam Fir.....				15 00					19 90 <sup>1</sup>	
Basswood.....	26 33	25 00	31 66 <sup>1</sup>	20 90	25 54	25 79		28 54	18 14	30 00
Beech.....	22 04		35 00 <sup>1</sup>	8 31	21 50		19 99		20 16	
Birch.....	31 36		31 27	9 12	26 01	30 98	25 05	29 43	19 59	
Butternut.....			35 73							
Cedar.....	16 00		55 22	12 83 <sup>1</sup>		45 00		18 00	58 57 <sup>1</sup>	
Cherry.....			76 07			43 47				
Chestnut.....	24 00		39 50	16 98 <sup>1</sup>		20 00	22 00	21 58		
Cottonwood.....	30 00			18 00 <sup>1</sup>		65 00 <sup>1</sup>				
Cypress.....	39 09		52 82							
Douglas Fir.....			40 63			41 59				
Ebony.....					192 00					
Elm.....	28 11		37 92 <sup>1</sup>	17 41	23 65	32 00	25 13		22 77	32 10
Gum.....	28 00		38 00	21 00 <sup>1</sup>			30 00		23 63	
Hard Pine.....	33 70					32 80				
Hemlock.....	21 59 <sup>1</sup>			16 27		16 00		17 00		
Hickory.....	38 23					70 00				
Ironwood.....						50 00 <sup>1</sup>				
Mahogany.....			158 03		80 00 <sup>1</sup>	187 24	117 38	168 57		
Maple.....	30 74		29 95	12 19	23 75	31 16	23 09		21 24	
Oak.....	47 83		59 28			36 12	46 48	43 57		68 60 <sup>1</sup>
Pine.....	30 80	23 84	34 48	18 79	35 00	26 21		20 49	21 30	28 50
Poplar.....				14 14					22 88	
Red Cedar.....										
Spanish Cedar.....			183 33	175 52 <sup>1</sup>						
Spruce.....	18 88	18 40	37 42 <sup>1</sup>	17 09		16 58		19 09	20 67	
Sumac.....			30 00							
Sycamore.....										
Tamarack.....	20 00		33 22							
Tulip.....	49 70		35 00			73 71	25 00			
Walnut.....			118 12							
Willow.....										

<sup>1</sup>Highest price paid for this material.<sup>1</sup>Lowest price paid for this material.

following a price indicates that it was the highest price paid for this material by any of the industries. The sign <sup>2</sup> indicates the lowest price paid. Blank spaces occur where a wood was not used by an industry at all.

TABLE 'E'—Continued.

SUMMARY OF AVERAGE PRICES OF DIFFERENT KINDS OF WOOD.

Kind of Wood.	Dairy Machinery.	Fruit Baskets.	Half-tone Blocks.	Hand-les.	Hard-wood Flooring.	Household Furniture.	Kitchen Cabinets.	Ladders.	Laundry Accessories.	Mantles.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Apple.....				46 63						
Ash.....		18 00		43 27	35 91	20 23	22 00			
Balsam Fir.....										
Basswood.....	26 43	16 03		20 87	20 93	23 63	25 72	28 00	26 03	25 00
Beech.....		12 64		22 52	19 71	18 42			23 62	
Birch.....		16 00	83 15 <sup>1</sup>	22 00	21 74	26 35			25 00	30 77
Butternut.....						44 17 <sup>1</sup>				
Cedar.....									27 00	
Cherry.....			100 00 <sup>1</sup>	35 00		58 33				
Chestnut.....						25 10				30 00
Cottonwood.....										
Cypress.....	30 77						35 00		29 96	
Douglas Fir.....								47 50		
Ebony.....								29 83	30 78	
Elm.....	28 13	17 57		27 36	20 77	23 82				
Gum.....							25 80	30 00		
Hard Pine.....	35 00						33 00	32 65	38 00	
Hemlock.....		11 00 <sup>2</sup>								
Hickory.....				34 43 <sup>2</sup>						
Ironwood.....										
Mahogany.....			82 50			141 72				135 45
Maple.....	26 09	17 13		22 86	22 82	23 74	23 04		27 61	
Oak.....				32 60	55 78	52 57	47 02		40 00 <sup>1</sup>	62 49
Pine.....	39 50 <sup>1</sup>	9 45 <sup>1</sup>				24 06		35 00	36 72	
Poplar.....		12 00 <sup>2</sup>								
Red Cedar.....						80 00				
Spanish Cedar.....										
Spruce.....		15 00				18 00	16 00			
Sumac.....										
Sycamore.....				25 00 <sup>2</sup>		40 00 <sup>1</sup>				
Tamarack.....										
Tulip.....	60 00	12 93 <sup>2</sup>				54 39				
Walnut.....						80 81				
Willow.....										

<sup>1</sup> Highest price paid for this material.<sup>2</sup> Lowest price paid for this material.

TABLE 'E'—Continued.

SUMMARY OF AVERAGE PRICES OF DIFFERENT KINDS OF WOOD.

Kind of Wood.	Musical Instru- ments.	Novel- ties.	Office Furni- ture.	Patterns	Picture Frames.	Pulleys.	Pulp.	Pumps and Tanks.	Refrig- erators.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Apple.....									
Ash.....	28 00	20 00	29 02	50 87	27 00				28 95
Balsam Fir.....			27 14	23 02	23 50		14 04 <sup>2</sup>		
Basswood.....	28 20	28 53	20 46				8 18 <sup>2</sup>		
Beech.....		20 39							
Birch.....	33 55	19 13	32 55	33 44	40 00			25 00	30 00
Butternut.....				26 25				20 09	
Cedar.....				43 36					
Cherry.....	33 60		31 49						
Chestnut.....	26 44		25 30						33 00
Cottonwood.....									
Cypress.....			53 78	62 58				42 39	
Douglas Fir.....				50 46				52 00	
Ebony.....									
Elm.....	30 01	28 39	26 62	28 14	25 00	30 00	8 18 <sup>2</sup>	25 00	26 00
Gum.....	29 73 <sup>1</sup>	28 00	26 00		38 00				
Hard Pine.....				40 32 <sup>1</sup>				31 74	
Hemlock.....				18 63				17 07	
Hickory.....		91 67 <sup>1</sup>		81 33					
Ironwood.....									
Mahogany.....	232 12 <sup>1</sup>	110 00	140 73	163 75					
Maple.....	31 56	26 23	29 67	32 39 <sup>1</sup>		24 75		27 60	
Oak.....	60 48	44 08	50 43	38 17	58 67			48 10	33 03
Pine.....	34 57	31 45	20 01	33 74				38 06	18 67
Poplar.....				13 41			12 64		
Red Cedar.....									
Spanish Cedar.....	307 50 <sup>1</sup>								
Spruce.....	36 57	25 00	20 34	19 59			12 45 <sup>2</sup>	22 00	19 40
Sumac.....									
Sycamore.....									
Tamarack.....								31 00	
Tulip.....	51 24		51 79	41 00					
Walnut.....	74 24	65 00	70 91						
Willow.....									

<sup>1</sup> Highest price paid for this material.<sup>2</sup> Lowest price paid for this material.

TABLE 'E'—Concluded.

SUMMARY OF AVERAGE PRICES OF DIFFERENT KINDS OF WOOD.

Refrigerators.	Kind of Wood.	Sash and Doors.	School Furniture.	Sporting Goods.	Tables.	Vehicles.	Vehicle Supplies.	Woodenware.	Miscellaneous.
\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
	Apple.....								
28 95	Ash.....	30 46	29 18	43 93	30 11	45 01	32 58		
	Balsam Fir.....	15 19				18 00			
	Basswood.....	22 08	22 00	30 00	25 35	27 55		17 89	27 49
	Beech.....	21 46			21 75	18 93		18 36	8 01 <sup>2</sup>
30 00	Birch.....	23 45	18 79	35 00	27 41	29 39	31 86	25 13	8 00 <sup>4</sup>
	Butternut.....	30 00				19 00 <sup>2</sup>			
	Cedar.....	23 19				50 00		16 76	
33 00	Cherry.....	28 58				94 17		25 00	12 00
	Chestnut.....	41 97 <sup>1</sup>	27 00	33 00	24 00				30 00
	Cottonwood.....								
	Cypress.....	37 12			26 43 <sup>2</sup>	54 29		26 00	
	Douglas Fir.....	31 68 <sup>1</sup>				36 67			
	Ebony.....					55 00 <sup>1</sup>			52 52
26 00	Elm.....	24 00	21 94	33 97	22 44	27 57	31 01	23 39	
	Gum.....	31 82			36 76	32 39			
	Hard Pine.....	31 01		38 75	33 00	28 51 <sup>2</sup>			
	Hemlock.....	16 33		18 00		17 87		23 29	
	Hickory.....	60 00		70 00		64 32	62 22		
	Ironwood.....					20 00			8 00 <sup>1</sup>
	Mahogany.....	122 25	110 00	225 00	117 14	135 83			
33 03	Maple.....	23 27	26 96	29 47	23 64	26 51	29 21	19 74	8 00 <sup>2</sup>
18 67	Oak.....	58 00	45 05	50 00	55 52	55 19	52 61		8 34 <sup>2</sup>
	Pine.....	28 26	15 60	22 00		26 79	14 49	15 94	31 93
	Poplar.....					35 00 <sup>1</sup>		15 00	15 00
	Red Cedar.....								
	Spanish Cedar.....								
19 40	Spruce.....	18 33	14 51			21 89			19 00
	Samar.....								
	Sycamore.....	32 00							
	Tamarack.....	17 18 <sup>1</sup>				20 00			
	Tulip.....	56 59		35 91		55 68		60 77	80 00 <sup>1</sup>
	Walnut.....			80 00	135 00 <sup>1</sup>	42 00 <sup>2</sup>			
	Willow.....								18 00

<sup>1</sup>Highest price paid for this material.<sup>2</sup>Lowest price paid for this material.

### WASTE UTILIZATION.

Many manufacturers reported having used their small waste pieces, short ends and trimmings in various ways other than for fuel.

Small pieces are first sorted out and resawn and used in the factory for small parts of the factory's own products. The remainder is sold to other industries if a market can be found, or manufactured on the premises into small articles as side lines. The utilization is seldom carried beyond this point, although many factories bale their shavings and sawdust and sell them for bedding and for fibre and pulp manufacture, and for meat curing.

There is a good field open for manufacturers of wood-distillation products, such as wood alcohol, acetic acid, turpentine and charcoal, in the use of this smaller waste which is usually burned under the factory boilers. The details of these economies are given below.

Sash and door factories sell or use their short ends and trimmings for the manufacture of apple, fish, and other boxes, bathroom fittings, baskets, bobbins, brush-blocks, butter moulds, dowels, firework woods, heading, game boards, insulator pins, ladder rounds, match-blocks, novelties, skewers, spindles, spools, stakes and wooden ware. They bale their common sawdust and sell it to butchers for floor covering to manufacturers of composition novelties, and to screw factories for cleaning screws. They sell shavings for bedding, packing and for drying wet land. Hickory and other hardwood sawdust is sold for smoking meats. Small waste pieces are sold for making ground wood-pulp, wood fibre for plaster work, and as a substitute for gravel in concrete masses.

Household-furniture factories utilize waste in the manufacture of boxes, brush backs, crates, inkstands, jardiniere stands, wastepaper baskets, rosettes, stools, tabourets and toys, and utilize cuttings of quartered oak and mahogany for wood carvings.

Boat and ship building firms reported the use of their small waste in the manufacture of boxes, boiler blocking, crates, ladder rungs, pickets, plugs, surveyor's stakes, skids, skis, toboggans, tent-pegs, wedges and whiffle-trees. They sold shavings and sawdust for bedding.

Manufacturers of vehicles and vehicle supplies utilized their waste chiefly in the manufacture of handles for small tools, such as chisels, files, hammers or gimlets, and also for the manufacture of dowels, furniture squares, ladder rungs, pump handles and wheelbarrows. These manufacturers using large quantities of hickory should be able to sell their sawdust to meat packers who prefer hickory sawdust for smoking hams and bacon.

Agricultural-implement makers also have a good opportunity of manufacturing tool handles, which many of them take advantage of, using for this purpose mostly hickory and ash. They also utilize waste in the manufacture of washing machine parts and sell sawdust for concrete mixing.

Box and crate manufacturers use their material down to very small cuttings and consequently have little useful material left. They make butts of hard maple logs into meat blocks and manufacture some small handles and mouldings and sell their shavings for bedding.

Manufacturers of store and office fixtures make staffs for railway flags and use basswood in making mail-boxes.

Foundry men and heavy-machine manufacturers utilize their waste in making battery boxes, skids, crates, pulleys and small parts of patterns and sell shavings for bedding.

Novelty makers use small pieces of waste in the manufacture of 'producer gas.' They sell common sawdust for making pine-cushion frames, hardwood sawdust for smoking meats, and pine and cedar sawdust for metal polish.

Sporting-goods manufacturers reported using waste for spindles, blind-roller parts, brush-blocks and pail-handles.

Handle manufacturers sell their finest hardwood sawdust for use in making a safety explosive and sell shavings for bedding.

## COMMODITIES MANUFACTURED FROM EACH KIND OF WOOD.

### APPLE.

Handles  
saw.

Mallets.

### ASH (BLACK).

Automobile  
frames.  
Baskets.  
Building Construction,  
balusters,  
baseboards,  
casing,  
ceiling,  
doors,  
flooring,  
interior finish,  
mouldings,  
panels,  
sheeting,  
siding,  
stair treads.  
Car Construction,  
finish,  
frames,  
seats.  
Casket Wagons.  
Church Furniture,  
Cooperage  
slack,  
tight.

Farm Gates.  
Furniture,  
seats,  
veneer core.  
Jewelry Cabinets.  
Kitchen Cabinets.  
Launches,  
finish,  
lining,  
seats.  
Patterns.  
Pianos  
veneer core.  
Picture Moulding.  
Reel Slats.  
Refrigerators  
finish.  
Shipbuilding.  
Scales.  
Store Fixtures.  
Tool Cases.  
Veneer Core.

### ASH (WHITE).

Ambulances.  
Automobile Frames.  
Baseball Bats.  
Baskets.  
Boxes.  
Brush-blocks.  
Buggies,  
bodies,  
gear-stock,  
hubs.  
Butter Tubs.

Car Construction,  
frames,  
pill. vs,  
post  
Chairs.  
Church Furniture.  
Cold Storages.  
Cooperage.  
slack,  
tight.  
Crating.

ASH (WHITE).—*Continued.*

Electrical Apparatus,  
insulation.  
Fanning Mills,  
screen frames.  
Fire Engines,  
poles.  
Flooring.  
Hames.  
Handles,  
broom,  
fork,  
hammer,  
hoe.  
rake,  
shovel,  
truck,  
whisk.  
Locomotives,  
cabs,  
running boards.  
Neck-yokes.  
Oars.

Pike-poles.  
Rudders,  
boat.  
Separators.  
Sleigh Tongues.  
Tables.  
Threshing Machines,  
frames,  
stringers.  
Wagons,  
bars,  
bodies,  
boxes,  
frames,  
gear-stock,  
hubs,  
poles,  
shafts,  
sills,  
tongues.  
Whiffletrees.

## BALSAM FIR.

Boxes.  
Building Construction,  
ceiling,  
framing.

Cooperage,  
slack.  
Pulp.  
Vehicles,  
body-work.

## BASSWOOD.

Automobile  
flooring.  
Bakeboards.  
Baskets,  
bottoms,  
covers.  
Bee Hives.  
Boxes,  
berry,  
butter,  
odorless,  
plug tobacco.  
Bread Proofs.  
Brush-backs,  
poles.  
Building Construction,  
baseboard,  
casing,  
ceiling,  
door panels,  
flooring,  
interior finish,

joists,  
mantles,  
mouldings,  
sheeting,  
siding.  
Butter Moulds.  
Canoes,  
crating,  
floor boards,  
planking.  
Car Construction,  
roofing.  
Cases,  
Caskets.  
Casket Wagons.  
Cheese Boxes,  
heading.  
Church Pews.  
Cigar Boxes.  
Clothes Horses.  
Clover Threshers.  
Coffins.

## BASSWOOD.—Continued.

- Cooperage,
  - slack,
  - tight.
- Crating.
- Crate Bottoms.
- Curtain Poles.
- Cutting Boxes.
- Drill Boxes.
- Excelsior.
- Fanning Mills,
  - drawers,
  - sides.
- Furniture.
  - backs,
  - core-stock,
  - drawers,
  - drawer bottoms,
  - inside case work.
- Handles,
  - broom,
  - scratch brush,
  - shawl-strap,
  - whisk.
- Hearses.
- Incubators,
  - inside work.
- Jewelry Cases.
- Kitchen Furniture,
  - cabinets,
  - table tops.
- Knife Boards.
- Mantles.
- Match Splints.
- Novelty Furniture.
- Organs,
  - actions,
  - bellows,
  - keys,
  - wind trunks.
- Pails.
- Paper,
  - half-tone book.
- Patterns.
- Piano,
  - actions,
- back boards,
- bottom boards,
- keys,
- tops.
- Picture moulding,
  - frames.
- Pulp.
- Rulers.
- Saw Shields.
- Show Cases,
  - backing.
- Spools.
- Step Ladders.
- Store Shelving.
- Straw-cutters,
  - boxes,
  - covers.
- Templates.
- Threshing Machines,
  - interior parts.
- Toys,
  - carriages,
  - sleds,
  - wagons.
- Trunk Boxes.
- Tubs.
- Turnings.
- Vehicles,
  - bodies,
  - bottoms,
  - boxes,
  - dashboards,
  - panels.
- Veneer Core.
- Wagons,
  - beams,
  - boxes,
  - panels,
  - staves.
- Wall Cases,
  - backing.
- Wash Boards.
- Wheelbarrows.
- Wood Fibre.
- Yard Sticks.

## BEECH

- Baskets.
- Boats,
  - parts.
- Bobbins.
- Boiler Lagging.
- Boxes.
- Brush-backs.
- Buck-saw Frames.
- Chairs,
  - rungs,
  - spindles,
  - turnings.

## BEECH.—Continued.

Cheese Boxes.	Kitchen Cabinets,
Cooperage,	bottoms,
slack.	pillars.
Crates,	Lawn Swings.
eggs,	Paper Racks.
fruit.	Park Benches.
Crating.	School Desks.
Curtain Poles.	Shipbuilding.
rings.	Spring Mattress.
Desks,	frames.
pigeon holes	Tables,
Distillation.	slides.
Dowels.	Turnings.
Flooring.	Vehicles,
Friction Blocks.	bodies.
Furniture.	Wash Boards.
drawer sides.	Washing Machine.
Hames.	legs.
Handles.	parts.
broom.	Wheelbarrow.
curry-comb.	braces.
electrical apparatus	handles.
saw,	Window Screen,
toy broom,	frames.
whip.	Wood Matting.
whisk.	Wringers,
wrench.	parts.
Harrow.	
double trees.	

## BIRCH.

Automobile Frames.	Carpet sweeper.
Billiard Tables.	cases.
Bobbins.	Chairs.
Boxes.	backs,
Brush-back.	legs,
Building Construction.	seats,
balusters.	slats.
ceiling,	Cheese Cutter.
doors,	boards.
door-sills,	Church Furniture.
flooring.	Closet,
framing,	seats,
interior finish,	tanks.
mantles.	Coffins.
mouldings.	Cold Storages.
newel-posts,	Corn Planters.
posts.	Cooperage,
stairwork.	slack.
Car Construction.	Crates.
flooring,	Desks.
inside finish,	drawers,
outside finish.	facework.

**BIRCH—Continued.**

Distillation.	plungers,
Electrical apparatus.	suckers.
Electrotype,	Refrigerators.
mounts.	Rubber Stamps,
Elevator Car,	handles,
frames.	mounts.
Furniture,	Safes,
inside work,	cabinet work.
outside work.	School Seats.
Half-tone Blocks.	Shells.
Handles,	Shipbuilding.
broom.	Show Case,
brush,	faces.
whip.	Scales.
whisk.	Skids.
Launches.	Spools.
finish.	Spring Mattress
Mantles.	frames.
Office Fixtures.	Store Fixtures.
Organs,	Table,
actions,	slides.
cases,	Threshing Machine,
pedals.	frames.
Paddles.	Toboggans.
Pianos,	Toys,
actions,	sleigh runners,
brackets,	wagon tongues.
carvings,	Trucks.
keys,	Tub Stands.
stools.	Turnings.
Picture Frames.	Wagons,
Pumps,	hubs.
handles,	Wall Cases.

**BUTTERNUT.**

Boats,	frames,
decks,	outside work.
finish.	Launches,
Building Construction,	decks,
interior finish.	gunwales,
Canoes,	seats.
deck,	Vehicles,
finish,	body work,
planking.	panels.
Furniture,	
drawers,	

**BOXWOOD.**

Wood Engravings.

**CEDAR (WESTERN RED).**

Boats,	Building Construction,
finish,	siding.
planking.	

## CEDAR (WESTERN RED).—Continued.

Canoes,	planking.
Fishnet Floats,	Speed Launches,
Pails.	planking.
Pumps.	Tan Drums.
Skiffs,	Tanks.
	Tubs.

## CEDAR (EASTERN WHITE).

Barn Construction,	Fences,
brackets.	baseboard,
Boats.	pickets,
planking.	posts.
Boxes.	Pails.
Building Construction,	Pianos,
foundation work,	actions,
verandah work.	tracker pins.
Canoes.	Railway Signals.
planking	Shipbuilding.
Car Construction,	Skiffs,
box flooring,	planking.
Coffins.	Tanks.
Cooperage,	Tan Leaches.
slack.	Tubs.
Electrical Apparatus.	Vehicles,
	body work.
	Washing Machines.

## CEDAR (RED).

## Mothproof Chests.

## CHERRY.

Boats.	Hurdles,
finish,	dies.
panels.	rubber stamps,
Brick Moulds.	seals.
Building Construction,	Hearses.
inside finish	Launches,
Canoe.	decks,
finish.	finish.
Car Construction,	Paddles.
inside finish.	Patterns.
outside finish.	Pianos.
Casket Wagons.	keys.
Checkerboards,	Safe Cabinets.
inlaid.	Spigots.
Furniture.	Taps.
facework.	Vehicles,
Halftone Blocks.	boxes,
	finish,
	panels,
	seats.

## CHESTNUT.

Billiard Tables.  
 Bouts,  
   finish.  
 Building Construction  
   casing,  
   doors,  
   interior finish,  
   moulding,  
   newel-posts.  
 Burial Boxes.  
 Car Construction,  
   core stock.  
 Caskets.  
 Chairs,  
   core-stock.  
 Church Furniture.  
 Coffins.  
 Crating,  
   books,  
   woodenware.  
 Desks,  
   core-stock.  
 Furniture,  
   core-stock,  
   facework,  
   tops.

Launch,  
   decking.  
 Mantles,  
   core-stock,  
   facework.  
 Organs,  
   case core-stock.  
 Pianos,  
   bottoms,  
   core-stock,  
   doors,  
   gables,  
   keys.  
 Refrigerators.  
 Sewing Machines,  
   core-stock.  
 Shells.  
 Show Cases,  
   doors,  
   bottoms.  
 Tables,  
   tops.  
 Veneer Cases.

## COTTON WOOD.

Bake-boards.  
 Boxes,  
   carbide.

Car Construction,  
   roofing.  
 Wagons,  
   box sides.

## CYPRESS.

Boats,  
   panels,  
   planking.  
 Building Construction,  
   doors,  
   interior finish,  
   sash,  
   siding,  
   verandah work.  
 Butter Workers.  
 Casket Wagons.  
 Cisterns.  
 Churns.  
 Dairy Machinery.  
 Drip Boards.  
 Greenhouses,  
   sash.  
 Hearses.  
 Kitchen Cabinets.  
 Launch,  
   planking.  
 Mining Tables.

Pulp Machinery,  
   beating engines,  
   tanks.  
 Silos.  
 Street Sprinklers,  
   tanks.  
 Table Tops.  
 Tin Drums.  
 Tanks,  
   covers.  
 Troughs.  
 Tubs,  
   round,  
   square.  
 Turnings.  
 Vats.  
 Washing Machines,  
   bodies,  
   frames,  
   lids.  
 Well Curbing.

## DOUGLAS FIR.

Building Construction,  
interior finish  
Car Construction,  
sills  
Derricks.  
Dredges.  
Dredge Anchors.  
Ladders,  
extension,  
step.

Lock-gates.  
Scows.  
Shipbuilding.  
Tanks.  
Wagons,  
reaches,  
poles.  
Well-drilling Machinery,  
framework.  
Wood Pipes.

## EIBONY.

Brush-backs,  
toilet.

Piccolos.

## ELM (ROCK).

Billiard Tables.  
Boats,  
earlings,  
fenders,  
keelsons,  
ribs,  
stems,  
timbers.  
Brick Machinery  
Brush-backs.  
Buggies,  
backs.  
Building Construction,  
ceiling.  
Canoe,  
frames,  
ribs.  
Casket Wagons.  
Chairs,  
rockers.  
Churns,  
frames.  
Cider Presses.  
Clover Threshers.  
Concrete Mixers,  
bolsters,  
frames.  
Crating,  
machinery.  
Dowels.  
Elevators,  
safety gates.  
Evensers.  
Furniture,  
framework  
Handles,  
DAN.

Hay-carriers,  
gates,  
pulleys.  
Hay-presses,  
tables.  
Hearses.  
Hockey Sticks.  
Ladder,  
rounds,  
steps.  
Land-rollers,  
frames.  
Launch,  
ribs,  
timbers.  
Pianos,  
backs,  
casing,  
gables,  
pedal-rails,  
posts,  
standards.  
Ploughs,  
beams,  
handles.  
Press-racks.  
Pumps,  
piston rods,  
suckers,  
valves.  
Shipbuilding,  
planking,  
timbers.  
Skion.  
Sleigh,  
beaches,  
bunks.

## ELM (BLACK).—(Continued)

Spigots.  
 Stable Fittings,  
   flooring,  
   gate-boards.  
 Stanchions.  
 Stump-pullers,  
   sills,  
   swoops.  
 Taps.  
 Threshing Machines,  
   frames.  
 Vehicle Supplies,  
   binding,  
   double-trees,  
   harness,  
   hubs,  
   neck-pieces,  
   racks,  
   reaches.

seats,  
 sleds,  
 single-trees,  
 stock-racks,  
 whiff-trees.  
 Wagons,  
   bars,  
   beams,  
   bunks,  
   gear stock,  
   rounds,  
   hubs,  
   reaches,  
   slaves.  
 Well-drilling Machinery,  
   frames.  
 Wheelbarrows.  
 Wood-saw,  
   frames.

## ELM (WHITE).

Baskets,  
   handles,  
   hoops,  
   rims.  
 Boxes,  
   fruit.  
 Brush-backs,  
   handles.  
 Building Construction,  
   interior finish,  
   flooring.  
 Can Jackets.  
 Cances,  
   crating,  
   decking.  
 Car Construction,  
   framework.  
 Casket Wagons.  
 Chairs,  
   backs,  
   seats,  
   slats.  
 Cheese Boxes,  
   sides.  
 Church Furniture,  
   pews.  
 Churn,  
   frames.  
 Cigar Boxes.  
 Cooperage,  
   slack,  
   tight.

Crates,  
   handles,  
   rims.  
 Desks.  
 Fanning Mills.  
 Follow Boards.  
 Furniture,  
   carving.  
 Handle,  
   farm implements.  
 Hearses.  
 Medical Cabinets.  
 Organs.  
 Pianos.  
 Picture Frames.  
 Press Blocks.  
 Pulleys.  
 Pulp.  
 Pulpers.  
 Refrigerators.  
 Rings.  
 Screen Frames.  
 Sieve Rims.  
 Sling Slats.  
 Tables.  
 Tent,  
   pegs,  
   rope slides.  
 Toys,  
   chairs,  
   sleighs,  
   wagons.

## BLM (WHITE).—Continued.

Trucks.	rims,
Trunk Slats.	seats.
Turnings.	Washing Machines,
Veneer Cores.	pin wheels.
Wagon.	Wheelbarrows,
boxes,	steam-bent trays.
felloes,	Wood Fibre.
racks,	wall boards.

## GRENADILLA OR COCUSWOOD.

Clarinets.	Flutes.
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## GUM.

Boxes.	Kitchen Cabinets.
Building Construction,	Launch,
interior finish,	finish.
mouldings.	Organs,
Chairs,	cases,
seats.	pipes.
Cooperage,	Pianos,
slack.	brackets,
Desks,	carvings.
drawers,	cases,
pigeon-holes.	keys.
Electroplates,	Picture Frames.
chucks.	Tables.
Furniture,	Toys,
backing,	sleigh tops.
bottoms,	Vehicles,
frames,	bodies,
sides.	boxes.

## HARD PINE.

Boats,	Churns.
keels,	frames.
stringers.	Derricks.
Bowling Alleys.	Electrical Apparatus.
Boxes,	Elevators,
stoves.	beams,
Building Construction,	supports.
casing,	Eveners.
ceiling,	Grain Boxes.
doors.	Kitchen Cabinets.
flooring.	Ladders,
interior finish,	extension,
moulding,	step.
panels.	Land-rollers,
shelving.	poles.
stair-work.	Locomotive,
studding.	running boards.
Car Construction,	Mill Construction.
flooring,	Oil tanks,
frames,	wood casing.
sills.	

**HARD PINE.—Continued.**

Pulp machinery,  
beating engines,  
tank bottoms.  
Pumps,  
rods.  
Rolling Partitions.  
Saw-mill Machinery,  
carriages,  
frames.  
Seeder Boxes.  
Shipbuilding.

Skids.  
Stanchions,  
side bars.  
Tables.  
Threshing Machines,  
elevator sides.  
Vehicle Supplies,  
poles,  
stock racks.  
Washing Machines.

**HEMLOCK.**

Barn,  
siding.  
Bowling Alleys,  
construction.  
Boxes.  
Building Construction,  
framing,  
flooring,  
joists,  
outside finish,  
roofing,  
siding,  
sheathing,  
studding.

Car Construction,  
box cars.  
Crates.  
Cribbing.  
Flasks.  
Moulding Boxes.  
Rough Boxes.  
Shells.  
Skids.  
Wagons,  
box bottoms.  
Well,  
covers,  
curbing.

**HICKORY.**

Board Rules.  
Car Construction,  
framing.  
Dowels.  
Electrical Apparatus.  
Evensers.  
Handles,  
axe,  
electric switch,  
hammer,  
peavy.  
Lacrosse Sticks.  
Log Rules.  
Mallets.  
Mowers.  
Ploughs,  
beams,  
handles.  
Threshing Machines,  
sieve frames.

Trucks.  
Vehicle Supplies,  
bent rims,  
cross-bars,  
dogs,  
doubletrees,  
felloes,  
gear-stock,  
neck-yokes,  
poles,  
reaches,  
shafts,  
shaft-bars,  
eills,  
singletrees,  
spokes,  
whiffletrees,  
top bows.

**IRONWOOD**

Canoe Handles.  
Car Construction,  
framework.

Distillation.  
Spokes.  
Whiffletrees

## LIGNUM VITÆ.

Bearings.  
Dowels.

Electrical Apparatus.  
Mallets.

## MAHOGANY.

Automobile,  
dash-boards,  
door trim,  
finish,  
fronts.  
Billiard Tables.  
Boats,  
finish,  
panels.  
Brush Backs,  
toilet.  
Building Construction,  
interior finish,  
panels.  
Canoes,  
decks,  
finish,  
planking.  
Car Construction,  
finish.  
Caskets.  
Chairs.  
Clocks.  
Closet-seats.  
Counters.  
Desks.  
Electrotype Mounts.  
Furniture,  
outside work.

Half-tone Blocks.  
Jewelry Cabinets.  
Launches,  
coaming,  
decks,  
finishing,  
lining,  
planking.  
Lodge Furniture.  
Organs,  
cases,  
key frames,  
stop jambs.  
Pianos,  
actions,  
brackets,  
carving,  
moulding,  
trimming.  
Shipbuilding,  
interior finish.  
Show Cases,  
face-work.  
Stereotypes.  
Tables.  
Turnings.  
Wood-cuts.

## MAPLE (HARD).

Axles.  
Bakers' Peels,  
bread racks.  
Baseball Bats.  
Baskets,  
bands,  
sides.  
Bearings.  
Bicycle,  
rims.  
Billiard Cues.  
Boats,  
keels,  
shoes.  
Bobbins.  
Bowling Alleys.  
Brick Machinery.  
Brush-blocks,  
handles.

Buggy,  
sills.  
Building Construction,  
flooring,  
interior finish,  
posts,  
stair work.  
Butter Moulds,  
leaves,  
workers.  
Canoes,  
gunwales.  
Car Construction,  
cross-sills,  
bumpers.  
Chairs,  
rockers,  
seats,  
turnings.

## MAPLE (HARD).—Continued

- Cheese Cutters,  
   boards.  
 Chucks.  
 Churn Frames.  
 Clover Threshers.  
 Cogs.  
 Collar Ties.  
 Cooperage,  
   slack.  
 Crating.  
   doors,  
   frames,  
   handles.  
 Disk Harrow,  
   poles.  
 Distillation.  
 Dowels.  
 Drills,  
   parts.  
 Electrical Apparatus.  
 Electrical Machinery,  
   machine collars.  
 Elevators,  
   car runs,  
   flooring,  
   guide strips.  
 Fanning Mills,  
   bearings,  
   posts.  
 Feeders.  
 Flasks.  
 Friction Blocks.  
 Hoisting Engines.  
 Furniture,  
   frames.  
 Gear Cases.  
 Grain Cradles.  
 Handles,  
   broom,  
   canthook,  
   carpet-sweeper,  
   hay-fork,  
   hoe,  
   paint-brush,  
   peavy,  
   saw.  
 Harrows.  
 Hay-carriers,  
   collar beams.  
 Hay-loader,  
   tooth bars.  
 Horse-power,  
   frames.  
 Insulator Pins.  
 Kitchen Furniture,  
   cabinet parts,  
   table legs.  
 Ladders.  
 Lagging,  
   rollers.  
 Land Rollers,  
   frames,  
   poles.  
 Lawn Mowers.  
 Mangles.  
 Mantles.  
 Meat Blocks.  
 Neck Yokes.  
 Organs,  
   framework.  
 Paddles.  
 Pianos,  
   actions,  
   back casings,  
   bridges,  
   keys,  
   pin blocks,  
   toes,  
   wrest plank.  
 Pike-poles.  
 Pins.  
 Ploughs,  
   poles.  
 Poles,  
   agricultural implements.  
 Press Blocks.  
 Pulley Sheaves.  
 Pumps,  
   handles,  
   plungers,  
   rods,  
   shafts.  
 Racks,  
   hay,  
   stock.  
 Rudders.  
 Rulers.  
 Saw-mill Machinery,  
   frames.  
 Separators,  
   frames,  
   sills.  
 Shipbuilding,  
   frames,  
   finish.  
 Skids.  
 Skis.

MAPLE (HARD) - *Continued.*

Sleighs,  
 benches,  
 bolsters.  
 Sling Slats.  
 Snow Ploughs.  
 Spindles.  
 Spinning Bobbins.  
 Split-wood pulleys,  
 arms.  
 bushings.  
 Spring-bed Frames.  
 Spring Mattress,  
 frames.  
 Stackers.  
 Stone Boats.  
 Tables,  
 feet,  
 legs.  
 Tanks.  
 Threshing Machines,  
 axles,  
 frames.  
 Toy,  
 broom handles,  
 chairs,  
 sleighs,  
 vehicles.  
 Truck Frames.

Turnings.  
 Vehicle Parts,  
 seat frames.  
 Wagons,  
 axles,  
 beams,  
 bolsters,  
 boxes,  
 box bars,  
 bunks,  
 bottoms,  
 sills,  
 staves,  
 tongues,  
 umbrella shanks.  
 Washing Machines,  
 legs,  
 parts.  
 Well-drilling Machinery,  
 axles,  
 boxing.  
 Wheelbarrows,  
 braces,  
 handles.  
 Whiffletrees.  
 Wood Matting.  
 Wringers.

## MAPLE (SOFT).

Baskets,  
 sides.  
 Boxes.  
 Brush-blocks.  
 Building Construction,  
 flooring,  
 interior finish,  
 posts.  
 stair work.  
 Casket Wagons.  
 Cheese Boxes.  
 Clothes Pins.  
 Coat Hangers.  
 Cogs.  
 Coil Moulds,  
 electrical.  
 Cooperage,  
 slack.  
 Crate.  
 Distillation.  
 Dowels.  
 Flasks.  
 Furniture,  
 core-stock,  
 frames.

Handles,  
 broom,  
 paint-brush,  
 saw.  
 Hearses.  
 Insulation,  
 electrical machinery.  
 Ladders.  
 Mantles.  
 Pattern Moulds.  
 Pulleys,  
 blocks,  
 rims.  
 Rulers.  
 Scales,  
 pillars.  
 School Desks,  
 seats.  
 Sewing Machines.  
 Skewers.  
 Skids.  
 Split-wood pulleys,  
 rims.  
 Spring Mattress,  
 frames.

## MAPLE (SOFT).—Continued.

Store Fixtures.

Toys.

vehicles.

Room handles,

chairs.

stools.

Turnings.

Washing Machines,

mouldings.

## OAK (BLUE).

Axes,  
handles.

Hammers.

## OAK (QUARTERED).

Beds.

Billiard Tables.

Boat,

finish.

Book Cases.

Building Construction,

baseboards,

casing,

doors,

flooring,

interior finish,

moulding,

panels,

stair-work.

Carpet Sweepers,

cases.

Caskets.

Chairs,

face-work.

Church Furniture,

panels,

pews.

Closet Seats.

Counters.

Desks,

face-work,

tops.

Filing cabinets.

Furniture.

face-work.

outside work,

tops.

Hymn Boards.

Mantles.

Mission Furniture.

Organs.

case-work,

stools.

Pianos,

case-work.

doors.

Picture Frames.

Refrigerators.

Sewing Machines.

Show Cases,

face-work.

Store Fixtures.

Switch Boards.

Tables.

Telephone Cabinets.

Wall Cases,

face-work.

Wood Carving.

Wooden Taps.

## OAK (RED).

Apple-barrel Presses.

Apple-box Presses.

Automobiles.

top bows.

Billiard Tables.

Boats.

bending material,

finish.

gunwales,

keels,

keelsons,

ribs.

stems.

thwarts.

timbers.

Bobsleighs.

runners.

Building Construction,

casing.

doors.

door-sills,

columns,

flooring.

framing.

OAK (RED).—*Continued.*Building Construction—*Continued.*

panels,  
pillars,  
moulding,  
sills,  
stairwork,  
interior finish,  
turned posts,  
window sills.  
Canoe,  
gunwales.  
Capstans.  
Car Construction,  
bumpers,  
cross-sills,  
decks,  
frames.  
Carving Boards.  
Caskets.  
Chairs,  
seats,  
slats,  
turnings.  
Church Furniture,  
pews.  
Closet Seats.  
Clover Threshers.  
Cold Storages.  
Coffins.  
Cooperage,  
tight.  
Counters.  
Desks,  
legs,  
outside work.  
Distillation.  
Dowel-pins.  
Friction Blocks.  
Furniture,  
gables,  
framework,  
outside work,  
partitions,  
posts,  
rails.  
Hames.  
Handles,  
scuffler.  
Hearses.  
Horse-powers,  
frames.  
Insulator Pins.

Kitchen Furniture,  
cabinets.

Launches,  
coaming,  
decking,  
frames,  
finish,  
keels,  
Lorries,  
Mantles.  
Organs,  
cases,  
stools.  
Pianos,  
case-work.  
Picture Frames.  
Plough-handles,  
beams.  
Refrigerators.  
Rolling Partitions.  
Shipbuilding,  
bent framing,  
cabin-work,  
deck-beams,  
guards,  
ribs.  
Show-cases,  
posts.  
Sleighs,  
knees,  
runners.  
Store Fixtures.  
Tables,  
dining,  
centre,  
extension,  
frames,  
legs.  
Toy,  
tables.  
Tugs,  
planking,  
timbers.  
Vehicle Supplies,  
doubletrees,  
felloes,  
hubs,  
racks,  
rims,  
sills,  
spokes,  
singletrees,  
whiffletrees.

OAK (RED).—*Continued.*

Wagons,  
bent rims,  
holsters,  
felloes,  
gear-stock,

spokes,  
staves,  
tongues.  
Wall Cases.  
Windmill Anchors.

## OAK (WHITE).

Alligators.  
Apple-barrel Presses.  
Apple-box Presses.  
Billiard Tables.  
Boats.  
deadwoods,  
decks,  
fenders,  
frames,  
interior finish,  
keels,  
keelsons,  
knees,  
posts,  
ribs,  
stems,  
stringers,  
timbers,  
transoms.  
Bob-sleighs,  
runners.  
Breaker-ploughs,  
beams.  
Brick Machinery.  
Building Construction,  
casing,  
columns,  
doors,  
flooring,  
framing,  
interior finish,  
moulding,  
newels,  
panels,  
pillars,  
sills,  
stair-work,  
turned posts.  
Canoe,  
gunwales,  
parts.  
Capstans.  
Car Construction,  
bumpers,  
decks,  
cross-sills,  
frames.

Chairs,  
seats,  
slats,  
turnings.  
Church Furniture,  
panels,  
pews.  
Churn Bottoms.  
Closet Seats.  
Cold Storages.  
Cooperage,  
tight.  
Counters.  
Desks,  
face-work,  
tops.  
Distillation.  
Dowel-pins.  
Drays.  
Dredges.  
Friction Blocks.  
Furniture,  
face-work,  
frames,  
posts.  
Humes.  
Handles,  
scuffer.  
Hearses.  
Horse-powers,  
frames.  
Insulator Pins.  
Jewelry Cases.  
Locomotives,  
bumpers,  
pilots.  
Lorries.  
Mantles.  
Organs,  
case-work,  
stools.  
Pianos,  
carvings,  
case-work,  
mouldings.  
Picture Frames.

## OAK (WHITE).—Continued.

Plough-beams,  
     handles.  
 Pulp Machinery.  
 Pumps,  
     handles,  
     rods,  
     plungers,  
     shafts.  
 Refrigerators.  
 Roller Staves.  
 Rolling Partitions.  
 Root-cutters.  
 Saw-mill Machinery,  
     carriages,  
     cross-arms,  
     frames.  
 Shipbuilding,  
     bulwarks,  
     cabin-work,  
     framing,  
     planking,  
     timbers.  
 Show Cases,  
     face-work.  
 Skiffs,  
     framing.  
 Sleighs,  
     knees,  
     runners.  
 Sorting Tables.  
 Steam Shovels,  
     framing,  
     sills.  
 Store Fixtures.  
 Street Sprinklers,  
     tank sills.  
 Switch-boards,  
     sills.

Tables,  
     centre,  
     dining,  
     extension,  
     legs.  
 Tanks.  
 Toy Tables.  
 Truck Top.  
 Tugs,  
     planking,  
     timbers.  
 Vehicle Supplies,  
     doubletrees,  
     felloes,  
     hubs,  
     neck-yokes,  
     racksills,  
     rims,  
     singletrees,  
     spokes,  
     whiffletrees.  
 Wagon,  
     bars,  
     beams,  
     bent rims,  
     bolsters,  
     bunks,  
     felloes,  
     gear-stock,  
     poles,  
     staves,  
     spokes,  
     tongues.  
 Warping Tugs.  
 Well-drilling Machinery.  
 Winch Frames.

## PINE (RED OR NORWAY).

Apple-box Presses.  
 Boats,  
     bottom boards,  
     seats.  
 Boxes.  
 Building Construction,  
     balusters,  
     casing,  
     framing,  
     joists,  
     screen doors,  
     window sills.  
 Carriage Frames.  
 Cases.

Cheese Boxes,  
     heading.  
 Crating.  
 Cross-arms,  
     telegraph pole,  
     telephone pole.  
 Curtain Stretchers.  
 Derricks.  
 Draughting Tables.  
 Elevators,  
     guide posts.  
 Fanning Mills.  
 Farm Gates.  
 Feed Boxes.

PINE (RED OR NORWAY).—*Continued.*

Foundry Boards,  
 flasks,  
 follow boards,  
 jackets.  
 Grain Baggers.  
 Ladders,  
 extension,  
 step.  
 Litter Boxes.  
 Loaders.  
 Masts.  
 Oars.  
 Ploughs,  
 platforms.  
 Pulpers.  
 Pulp Machinery,  
 cross-arms,  
 screens,  
 wood splitters.

Pumps.  
 Racks,  
 hay,  
 stock.  
 Shipbuilding,  
 masts,  
 spars.  
 Silos.  
 Skids.  
 Skiff Planking.  
 Sleigh Boxes.  
 Spars.  
 Spring Beds.  
 Tanks.  
 Tent Poles.  
 Trucks.

## PINE (WHITE).

Alligators.  
 Awning Rollers.  
 Balusters.  
 Base Blocks.  
 Basket Bottoms.  
 Bee Hives.  
 Billiard Tables.  
 Blinds,  
 slats.  
 Boats,  
 bottom boards,  
 flooring,  
 planking.  
 Boxes.  
 Brooders.  
 Brush-backs.  
 Building Construction,  
 balusters,  
 clapboards,  
 core-stock,  
 cornice,  
 doors,  
 door sills,  
 flooring,  
 framing,  
 interior finish,  
 mouldings,  
 newels,  
 outside finish,  
 panels,  
 posts.

ridge-poles,  
 sash,  
 shelving,  
 siding,  
 stair-work,  
 turned columns,  
 storm sash,  
 verandah work,  
 window frames.  
 Burial Boxes.  
 Canoe,  
 bottom boards.  
 Car Construction,  
 roofing.  
 Cases.  
 Caskets.  
 Casket Wagons.  
 Cattle Troughs.  
 Cheese-boxes,  
 heading.  
 Church  
 pews.  
 Churns,  
 covers.  
 Cisterns.  
 Cloth Boards.  
 Clover Threshers.  
 Coffins.  
 Cooperage,  
 slack,  
 tight.  
 Crate Bottoms.

## PINK (WHITE) -Continued.

Crafting.	Pumps,
Draughting Tables,	heads,
boards.	caps,
Elevators.	logs,
doors,	tubing.
guide posts.	Railway Signals.
Feeders.	Refrigerators.
Fire-proof Doors,	Rough Boxes.
metal covered	Rosettes.
Flour-milling Machinery.	Safes,
Foundry Boxes,	cabinet work.
boards,	Saw-mill Machinery,
flasks,	carriage frames,
follow boards.	trimmer frames.
Furniture,	School Desks.
drawers,	Screen Frames.
inside work.	Separators,
Hand Sleighs.	lining.
Hearses.	Shade Rollers.
Ice-cream Tubs.	shells.
Incubators,	Shipbuilding,
walls.	cabin-work,
Ironing Boards.	decking,
Kitchen Furniture,	hatch-covers.
cabinets,	Skids.
tables.	Skiffs,
Knife Cleaners.	keels.
Launehes,	Spray Tanks.
decking.	Square Tubs.
flooring	Stackers.
Lighthouses.	Straw-cutters.
Litter Boxes,	Tan Drums.
Matches,	Tanks.
match splints.	Threshing Machines.
Oars.	sides.
Organs,	Toy,
actions,	wagons.
bellows,	Trunk Boxes.
boxes,	Tul
frames,	Vats,
pipes.	brewery.
Pails.	Wagons,
Patterns.	boxes
Pianos,	racks
actions,	Warping Tugs.
boxes,	Washing Machines.
keys.	Weather strips
Picture frames.	Wheelbarrows.
backing.	Woollen Machinery
Player-pianos,	lining.
parts.	

## POPLAR.

Boxes.  
 Brake-bands,  
 machinery.  
 Cooperage,  
 slack.  
 Cheese-boxes,  
 heading.  
 Crating.  
 Excelsior.

Foundry Boxes,  
 flasks,  
 follow boards.  
 Potato Machinery,  
 planters,  
 sorters.  
 Pulp.  
 Vehicles,  
 boxes,  
 bottoms.

## ROSEWOOD.

Furniture,  
 face-work.  
 Piano,  
 finish.

Picture Frames.  
 Turnings.

## SPANISH CEDAR.

Canoe Finish.  
 Pianos.

Cigar Boxes.

## SPRUCE (SITKA) (B.C.).

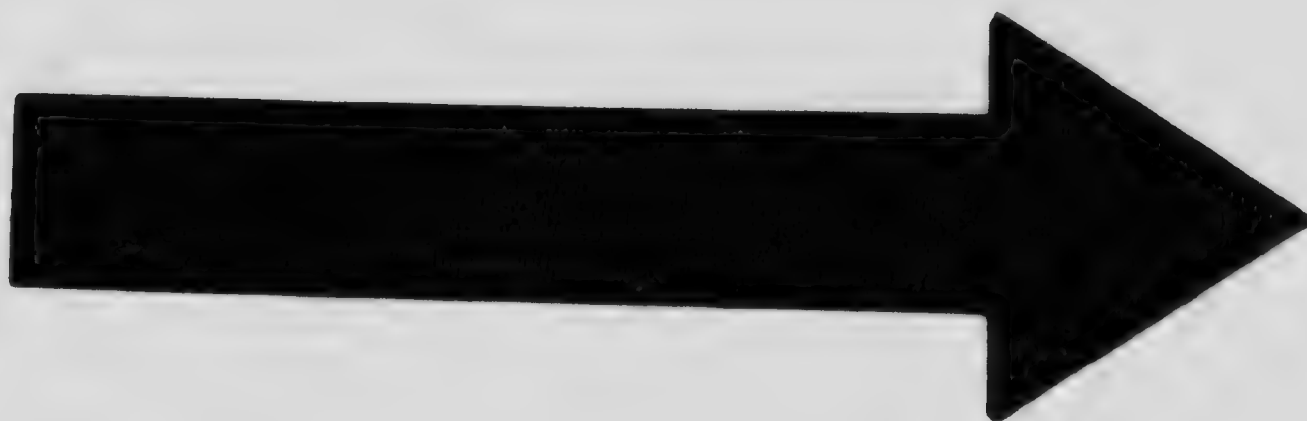
Masts.  
 Oars.  
 Organ,  
 sounding boards.

Pianos,  
 sounding boards.  
 Spars.

## SPRUCE (EASTERN).

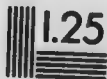
Baskets,  
 bottoms.  
 Boats,  
 battens,  
 floors,  
 seats.  
 Boxes.  
 Brooders.  
 Building Construction,  
 barn doors,  
 clapboards,  
 flooring,  
 sash,  
 sheeting,  
 siding,  
 stair treads.  
 Butter-boxes.  
 Canoes,  
 planking.  
 Car Construction,  
 box-car sides,  
 baskets.  
 Cheese-boxes,  
 heading.

Cisterns.  
 Cloth-boards.  
 Collins.  
 Cold Storages,  
 lining.  
 Cooperage,  
 slack.  
 Crating.  
 Derricks.  
 Farm Gates.  
 Feeders.  
 Fire Doors,  
 metal covered.  
 Foundry flasks,  
 moulding boxes.  
 Furniture.  
 Green Cars,  
 floors.  
 Incubators.  
 Kitchen Cabinets.  
 Launches,  
 clamps,  
 keelsons.  
 Oars.



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APPLIED IMAGE Inc.

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(716) 288-5989 - Fax

SPRUCE (EASTERN).—Continued.

Odorless Boxes.	Rough Boxes.
Organs,	School Furniture.
pipes,	Shipbuilding,
sounding boards.	hatch covers,
Paddles.	masts,
Pianos,	planking,
core-stock,	spars
ribs,	Shells.
sounding boards,	Silos.
standards.	Sleigh Boxes,
Poultry Crates.	bunks.
Pulp.	Stable Doors.
Racks,	Stacker-
hay,	Turning-
stock.	Violins.
Refrigerators,	Wagon Boxes.
lining.	Wooden Pipes.

SUMAC.

Boats,  
  finish.

SYCAMORE.

Carpet sweepers,	Furniture.
cases.	Handles.
Doors.	special.

TAMARACK.

Boats.	Shipbuilding,
Building Construction,	planking.
flooring,	Stable Flooring.
framing,	Tanks.
sheeting.	Vehicles,
Pumps,	poles,
logs,	racks,
piping,	reaches.
stocks.	

TEAK.

Electric Apparatus.	Shipbuilding.
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TULIP (WHITEWOOD, YELLOW POPLAR).

Automobile,	newel cores,
seats.	panels.
Bake-boards.	sash.
Billiard Tables.	Butter Rollers,
core-stock.	trays,
Boats,	workers.
finish.	Cabinet Work.
Building Construction,	core-stock,
casing.	cross-binding.
core-stock.	finish.
crossbinding.	Canoes,
doors,	finish.
interior finish,	

## TULIP (WHITEWOOD, YELLOW POPLAR).—(continued.)

Car Construction,  
 crossbinding,  
 deck frames,  
 headline cores,  
 letter boards,  
 outside finish,  
 pillars,  
 sign boards.  
 Carvings.  
 Chairs,  
 crossbinding,  
 seats.  
 Cheese Boxes,  
 heading.  
 Decks,  
 crossbinding.  
 Dough Boards.  
 Fruit Crates.  
 Furniture,  
 crossbinding,  
 inside work.  
 Hat Blocks.  
 Organs,  
 chests,

core-stock,  
 crossbinding,  
 pipes.  
 Paddles.  
 Piano,  
 actions,  
 casing,  
 core-stock,  
 crossbinding,  
 doors,  
 falls,  
 frames,  
 player parts,  
 trusses.  
 Pulp Rolls.  
 Show Cases  
 doors.  
 Tables,  
 crossbinding,  
 tops.  
 Vehicles,  
 body-work,  
 panels.

## WALNUT.

Boats,  
 finish.  
 Billiard Tables,  
 face-work.  
 Cabinets,  
 face-work.  
 Canoes,  
 snouts.  
 Furniture,  
 face-work.  
 Electrical Apparatus.  
 Gun Stocks.  
 Launches,  
 decks,  
 finish.

Organs,  
 case work.  
 Pianos,  
 actions,  
 carvings,  
 case-work,  
 mouldings,  
 players.  
 Show Cases,  
 face-work.  
 Tables.  
 Turnings.  
 Vehicles,  
 body work.

## WILLOW.

Artificial limbs,  
 feet,  
 sockets.

### CLASSIFIED DIRECTORY OF MANUFACTURERS.

N.B.—Where one firm made more than one class of commodity, a division of the information was necessary, and for this reason the name of a manufacturer in the directory may appear more than once according to the number of different classes of products that he manufactured.

#### AGRICULTURAL IMPLEMENTS.

American-Abell Engine & Thresher Co., Ltd., 48 Abell St., Toronto.  
 Aspinwall Mfg. Co., Guelph.  
 Bell, B., & Son Co., Ltd., St. George.  
 Bell, Robt., Engine & Thresher Co., Seaforth.  
 Biedannaz & Sons, 156 Duke St., Toronto.  
 Binkle, Philip, Neustadt.  
 Bissell Co., T. E., Ltd., Elora.  
 Bruce Agricultural Works, Teeswater.  
 Buchanan & Co., M. T., Ingersoll.  
 Canadian Siverasons, Ltd., Lindsay.  
 Christie, Robt., Holstein.  
 Cockshutt Plow Co., Ltd., Brantford.  
 Cowan, O. D. (Estate), Gananoque.  
 Dillon, R., & Son, Oshawa.  
 Ebersol, J. R., Milverton.  
 Erie Iron Works, Ltd., 102-112 Talbot St., St. Thomas.  
 Ernst Bros., Mount Forest.  
 Eureka Planter Co., Ltd., 139 Winnitt St., Woodstock.  
 Fleury, J., Sons, Aurora.  
 Frost & Wood Co., Ltd., Smiths Falls.  
 Gerolamy, W. A., Tara.  
 Gillies, S., & Sons, Ailsa Craig.  
 Goodison, Jno., Thresher Co., Ltd., 236 Milton St., Sarnia.  
 Hamilton, Peter, Co., Ltd., George St., Peterborough.  
 Hammell & Suggett, Main St., Beeton.  
 Hampson, A. G., Walkerton.  
 Hercules Shaft Co., Stratford.  
 Herrgott Bros., Mildmay.  
 Hilborn Co., Ayr.  
 International Harvester Co., of Canada, Ltd., Sherman Ave., Hamilton.  
 Macdonald Thresher Co., Ltd., cor. Erie and Gore Sts., Stratford.  
 Maple Leaf Harvest Tool Co., Ltd., Tillsonburg.  
 Martin Mfg. Co., Ltd., Brock St., Whitby.  
 Maxwell, David, & Sons, St. Marys.  
 McKinnon Dash Co., Ontario St., St. Catharines.  
 Meaford Wheelbarrow Co., Ltd., Meaford.  
 Merrill, W. Grant, Co., 27 Jarvis St., Brantford.  
 Mississippi Iron Works, Almonte.  
 Moore, W. C., Bobcaygeon.  
 Murray, Jas., Exeter St., Exeter.  
 Noxon Co., Ltd., Thames St., Ingersoll.  
 Oliver Chilled Plow Works, Hamilton.  
**Massey-Harris Co., Ltd., Toronto,**

Percival Plow & Stove Co., Merrickville.  
 Sawyer-Massey Co., Hamilton.  
 Sculthorp, H., & Son, John St., Port Hope.  
 Shantz, P. E., Fountain St., Preston.  
 Skinner Co., Ltd., The, Gananoque.  
 Smith Stacker & Feeder Co., Ltd., 138 Jackson St. E., Hamilton.  
 Starrey, H. I., Durham.  
 Superior Barn Equipment Co., Fergus.  
 Taylor-Forbes Co., Ltd., Guelph.  
 Templin Mfg. Co., The, St. Andrew St., Fergus.  
 Tudhope-Anderson Co., Ltd., The, Lindsay.  
 Tolton Bros., 12 Huskisson St., Guelph.  
 Verity Plow Co., Ltd., Brantford.  
 Waterloo Mfg. Co., King St., Waterloo.  
 Watt, R., Machine Works, Ridgetown.  
 Welland Vale Mfg. Co., Ltd., The, Lock 2, St. Catharines.  
 White, Geo., & Sons Co., Ltd., The, Catell St., London.  
 Winhold, C., Tavistock.  
 Woon, Robt., & Co., William St., Oshawa.

## BEEKEEPERS' AND POULTRYMEN'S SUPPLIES.

Aspinwall Mfg. Co., Guelph.  
 Excelsior Basket Co., Clarksburg.  
 Hamm & Nott Co., Ltd., The, Brantford.  
 Lee Mfg. Co., Ltd., Pembroke.  
 Mills, A. Lincoln, Brock St., Merrickville.  
 Model Incubator Co., The, 196 River St., Toronto.

## BOATS.

Andrews, Geo. E., Stone St. S., Gananoque.  
 Askew Boat Works, 459 Bay St. N., Hamilton.  
 Aykroyd Bros., Lake St., Toronto.  
 Bastien, H. L., Boat Works, 425 Bay St. N., Hamilton.  
 Boone, C. S., Dredging Co., 17½ Adelaide St., Toronto.  
 Bracebridge Launch Works, Bracebridge.  
 Brown, L., 509 Echo Drive, Ottawa.  
 Brown, J. G., Queen St., Lakefield.  
 Bush, W. L., Coldwater.  
 Butler, M. L., Main St., Brighton.  
 Canadian Canoe Co., The, Rink St., Peterborough.  
 Capital Boat Works, 612-614 Bank St., Ottawa.  
 Carveth, Jno., 11 Beaconsfield Ave., Station C, Toronto.  
 Cleland, H., Collingwood.  
 Cockburn, A. E., Pembroke.  
 Collingwood Shipbuilding Co., Collingwood.  
 Conley, Jas., & Son, Main St., Westport.  
 Cossey, H. T., Lake Side, Kenora.  
 Coward Boat Works, Iroquois.  
 Crews, Geo., Pembroke.  
 Crews, J. G., Main St., North Bay.  
 Croswell Bros., Ahmic Harbor.  
 Cupples, Geo. A., foot of Morse St., Toronto.

Davis Dry Dock Co., Wellington St., Kingston.  
 Dean, Walter, Boat & Canoe Co., 1751 Queen St. W., Toronto.  
 Derouchie, Norman, Fourth St., Cornwall.  
 Desrochers Bros., Pembroke.  
 Devins, I. N., Humber Bay, Toronto.  
 Dey Bros., Laurier Ave. E., Ottawa.  
 Ditchburn, H., Boat Mfg. Co., Gravenhurst.  
 Doherty, R. J., Collingwood.  
 Dominion Lighthouse Depot, Prescott.  
 Dubeau, C. N., Prescott.  
 Essex Launch Co., 169 Arthur St., Windsor.  
 Georgian Bay Shipbuilding & Wrecking Co., Midland.  
 Gidley Boat Co., Ltd., The, Main St., Penetanguishene.  
 Gilbert Motor Boat Co., Jessie St., Brockville.  
 Gordon Boat Works, Bobcaygeon.  
 Great Lakes Dredging Co., Port Arthur.  
 Hamilton Steam Boat Co., Hamilton.  
 Harris Bros., Wellington.  
 Hepburn Bros., Bridge St., Picton.  
 Hicks, C. L., Humber Bay, Toronto.  
 Holder, Wm., 58 King St. W., Kingston.  
 Inland Lines, Ltd., Midland.  
 Knapp, Jas., & Sons, Barriefield.  
 La Chapelle Bros., 49 Jessie St., Brockville.  
 Lakefield Canoe Bldg. & Mfg. Co., Ltd., Lakefield.  
 Lake Ontario & Bay of Quinte Steamboat Co., Ltd., Kingston.  
 Lancaster, W., Dundas St., London.  
 Lindsay Boat Works, The, Lindsay.  
 Marine Construction Co., Ltd., Lake St., Toronto.  
 Mastin, Jas., Hall St., Gore Bay.  
 McCrae, Jno., 81 Williams St., Lindsay.  
 McCubbin, Jas., Fifth St., North Bay.  
 McKeough & Trotter, Limited, 17 Thames St., Chatham.  
 Midland Towing & Wrecking Co., Midland.  
 Montreal & Cornwall Navigation Co., Ltd., Pitt St., Cornwall.  
 Morrill, R. J., Napier St., Collingwood.  
 North Bay Boat Livery, North Bay.  
 Ontario St. Lawrence Canals, Cornwall.  
 Petch, W. S., Gananoque.  
 Peterboro Canoe Co., Ltd., Water St., Peterborough.  
 Polson Iron Works, Ltd., Esplanade Ave. E., Toronto.  
 Quality Craft Boat Works, Picton.  
 Ramsay, Alexander, Stone St., Gananoque.  
 Robertson Bros., Foot of Bay St., Hamilton.  
 Robinson Motor & Steel Boat Works, cor. Lindsay and Ridout Sts., Lindsay.  
 Ross, J. H., Boat & Canoe Co., Ltd., The, Mississauga, Orillia.  
 St. Lawrence Engine Co., Ltd., The, St. Andrew St., Brockville.  
 Stone, J. W., Boat Mfg. Co., Ltd., Main St., Kenora.  
 Thompson Boat Works, Parry Sound.  
 Watts, Wm., & Sons, Collingwood.  
 Weir, Jas., 612 Wentworth St. N., Hamilton.  
 Welland Canal Tug Co., Ltd., West St., Port Colborne.  
 West & Peachey, Simcoe.  
 Westport Woodworking Co., Westport.  
 Wiarton Marine Ry. Co., Wiarton.  
 William English Canoe Co., The, Peterborough.

## BOXES, CRATING AND CIGAR BOXES.

- Abel, J. H., 41 Pitt St. W., Windsor.
- \*Aitchison, D., & Co., 98 Main St. W., Hamilton.  
 Alsop Process of Canada, Ltd., The, 472 King St. W., Toronto.  
 American Radiator Co., Market St., Brantford.
- \*Anderson MacBeth, Ltd., 76 Bay St., Toronto.  
 Andrews Wire Works of Canada, Ltd., Watford.  
 Arlington Co. of Canada, Ltd., 58 Fraser Ave., Toronto.  
 Art Glass & Architectural Co., 400-8 Wellesley St., Toronto.  
 Atkins, E. C., & Co., Sherman St. N., Hamilton.
- \*Avery, H. & Sons, 114 Stanley Ave., Ottawa.  
 Bailey, Dixon & Co., Ltd., 96 Spadina Ave., Toronto.  
 Baird, H. C., Son & Co., Parkhill.
- \*Baird, D. C., St. Marys.  
 Banfield, W. H. & Sons, 120 Adelaide St., Toronto
- \*Barchard & Co., Ltd., 135-151 Duke St., Toronto.  
 Barker, D. J., & Co., Picton.  
 Baynes Carriage Co., Ltd., Gilkenson Ave., Hamilton.  
 Beach, The M. F. Co., Ltd., Winchester.  
 Beach Foundry Co., Ltd., The, Winchester.  
 Beach Furniture Co., Sydney St., Cornwall.  
 Beck, Adam, 155 George St., London.
- \*Beck, C., Mfg. Co., Ltd., Penetanguishene.  
 Beckett Paper Co., The, Hamilton.  
 Bell Furniture Co., Ltd., The, Southampton.  
 Bell Piano & Organ Co., Ltd., Guelph.  
 Belleville Pottery Co., Mill St., Belleville.  
 Ben Hur Mfg. Co., Ltd., Hamilton.  
 Berg Machinery Mfg. Co., Ltd., Bathurst and Niagara Sts., Toronto.  
 Berlin Furniture Co., Ltd., The, Victoria St., Berlin.  
 Berlin Interior Hardwood Co., Ltd., 72 Wilmot St., Berlin.  
 Berlin Machine Works, Ltd., Hamilton.  
 Bertram, Jno., & Sons Co., Ltd., Dundas.  
 Beverly Wood Specialty Co., 83 Richmond St., Toronto.  
 Booth-Coulter Copper & Brass Co., Ltd., 115 Sumach St., Toronto.  
 Borland Sulky & Cart Co., 139-53 William St., Stratford.  
 Bowes, Jamieson, Ltd., 519 King St. E., Hamilton.  
 Bowser S. F., & Co., 66-68 Fraser Ave., Toronto.  
 Boyd Caldwell Co., Ltd., Lanark.  
 Brantford Carriage Co., Brantford.
- \*Brennen, M., & Sons Mfg. Co., The, King William St., Hamilton.
- \*Brockville Lumber Co., Ltd., The, William and Lewis Sts., Brockville.  
 Brown, J. D., 5 Bay St., Gravenhurst.  
 Brown Boggs Co., Ltd., The, Hamilton.  
 Brown's Copper & Brass Rolling Mills, Toronto.  
 Bruce Agricultural Works, Teeswater.  
 Brunswick-Balke-Collender Co., 67 Adelaide St. W., Toronto.
- \*Bryan Mfg. Co., Ltd., The, Main St., Collingwood.  
 Buchanan, M. T., & Co., Ingersoll.  
 Burrell, D. H. & Co., Brockville.  
 Burrow, Stewart & Milne Co., Ltd., cor. Cannon and Hughson Sts., Hamilton.  
 Burton & Baldwin Mfg. Co., Ltd., 24-34 Sanford Ave. N., Hamilton.  
 Bush, W. T., Coldwater.  
 Butler & Conway, 5 Murray St., Ottawa.  
 Butterworth Foundry, Ltd., Broad St., Ottawa.

- Cameron Dunn Mfg. Co., The, Strathroy.  
 Canada Carriage Co., Ltd., Merritton, Hd. Office, Montreal.  
 Canada Carriage Co., Park St., Brockville.  
 Canada Coating Mills, Ltd., Georgetown.  
 Canada Foundry Co., 212 King St. W., Toronto.  
 Canada Furniture Mfgs., Ltd., Woodstock (Hd. Office).  
 Canada Malleable & Steel Range Mfg. Co., Ltd., Oshawa.  
 Canada Spool & Bobbin Co., Ltd., Walkerton.  
 Canada Steel Goods Co., Ltd., Arthur St., Hamilton.  
 Canada Wire & Iron Goods Co., 182 6 King William St., Hamilton.  
 Canadian Billiard Table & Supply Co., 110 York St., Toronto.  
 Canadian Billings & Spencer, Ltd., Welland.  
 Canadian Electrical & Motor Co., Ltd., 99-101 Queen St., Toronto.  
 Canadian Furbanks Morse Co., Ltd., 1379 Bloor St., Toronto.  
 Canadian Fog Signal Co., Ltd., Con. Life Chbrs., Toronto.  
 Canadian General Electric Co., Peterborough.  
 Canadian Heating & Ventilating Co., Ltd., Owen Sound.  
 Canadian Logging Tool Co., Ltd., cor. Bruce St. and C.P.R. Crossing, Sault Ste. Marie.  
 Canadian Machinery Corporation, Ltd., Concession St., Galt.  
 Canadian Meter Co., Ltd., 90 Caroline St., Hamilton.  
 Canadian Show Case Co., 333 Adelaide St. W., Toronto.  
 Canadian Westinghouse Co., Ltd., Princess St., Hamilton.  
 Canadian Wolverine Co., Ltd., 214 St. Clair St., Chatham.  
 Carew, Jno., Lumber Co., Ontario St., Lindsay.  
 \*Cavers, Jas., & Son, Carleton Place.  
 Central Press Agency, 70 Pearl St., Toronto.  
 Century Telephone Construction Co., Bridgeburg.  
 Chamberlain Metal Weather Strip Co., Ltd., Kingsville.  
 Chaplin Wheel Co., Ltd., 240 Raleigh St., Chatham.  
 Chapman Engine & Mfg. Co., Ltd., Dundas.  
 Chatworthy & Son, Ltd., 161 King St. W., Toronto.  
 Chesley Furniture Co., Ltd., Chesley.  
 Clare Bros. & Co., Ltd., Preston.  
 Cockshutt Plow Co., Ltd., Brantford.  
 \*Coleman Fare Box Co., Tottenham.  
 Columbia Handle & Lumber Co., London.  
 Conboy Carriage Co., The, Queen St. E. and Don, Toronto.  
 Connor, J. H. & Son, Ltd., Pretoria Ave., Ottawa.  
 Connor Machine Co., Ltd., Exeter.  
 Coombe, F. E., Furniture Co., The, Huron Terrace, Kincardine.  
 \*Cooper, H. Y., Bloomfield.  
 Copp Stove Co., Ltd., Fort William.  
 J. Coulter Co., of Toronto, Ltd., 45 Lombard St., Toronto.  
 \*Cowan, O. D., Estate, Gananoque.  
 Cowan Art Stained Glass Co., Ltd., 96 Adelaide St., Toronto.  
 Craik, Alex., Front St., Strathroy.  
 Crawford, W. C. Co., Ltd., Tilbury.  
 Crompton Corset Co., 78 York St., Toronto.  
 Cumner-Dowswell, Ltd., Elgin St., Hamilton.  
 Dairs, Jno., 7 Frank St., St. Catharines.  
 \*Davidson, Jas., Co., Wellington St., Ottawa.  
 Devlin & Pritchard, 54 George St., Ottawa.  
 Diamond Glass Co., Ltd., Picton and James Sts., Hamilton.  
 Dillon, R., & Son, Oshawa.

- Dixon Mfg. Co., The, Collingwood.  
 Dodge Mfg. Co., Ltd., Pelham Ave., Toronto.  
 Doherty, Jno., Christina St., Sarnia.  
 Doherty Mfg. Co., Ltd., Vidal St., Sarnia.  
 Dominion Cannery, Ltd., Main and James Sts., Hamilton.  
 Dominion Carriage Co., Perth and Kingsley Sts., West Toronto.  
 Dominion Gas Meter Works, 328 Wortley Rd., London.  
 \*Dominion Lighthouse Depot, Prescott.  
 Dominion Radiator Co., Dufferin St., Toronto.  
 Dominion Telephone Mfg. Co., Ltd., Waterford.  
 Dore, Wm., Josephine St., Wingham.  
 \*Douglas Bros., Ltd., 124 Adelaide St. W., Toronto.  
 Down Draft Furnace Co., Ltd., Galt.  
 Dunlop Tire & Rubber Goods Co., 244 Booth Ave., Toronto.  
 Durham Furniture Co., Ltd., Lampson St., Durham.  
 \*Dymont Baker Lumber Co., London.  
 East Co., 300 Yonge St., Toronto.  
 Easy Washer Co., 35½ Dundas St., Toronto.  
 Edwards Electrical Co., Ltd., Milton.  
 Edwardsburg Starch Co., Ltd., Cardinal.  
 Elliott, Jas. S., & Son, Prescott.  
 Ellis, P. W., & Co., 31 Wellington St. E., Toronto.  
 Ellis Furniture Co., Thames St., Ingersoll.  
 Elmira Interior Woodwork Co., Yonge St., Elmira.  
 Elora Furniture Co., Elora.  
 Erie Knitting Co., Ltd., Dunnville.  
 Eureka Planter Co., Ltd., The, 139 Winnitt St., Woodstock.  
 Evans Bros. Piano Co., Ingersoll.  
 Everest, Geo. M., Arkona.  
 Excelsior Basket Co., Clarksburg.  
 Findlay Bros. Co., Ltd., Carleton Place.  
 \*Firstbrook Box Co., Ltd., Toronto.  
 Fitz-Gerald, A. J., Tweed.  
 Fleck, Alex., Ltd., 428 Wellington St., Ottawa.  
 Fletcher Mfg. Co., Ltd., Glencoe.  
 Flexlume Sign Co., Ltd., The, St. Catharines.  
 Forest City Bent Goods Co., 585 Bathurst St., London.  
 Fox Bros. Co., Ltd., Windsor.  
 Globe-Wernicke Co., Ltd., The, King St., Stratford.  
 Frost & Wood Co., Ltd., Smiths Falls.  
 Gendron Mfg. Co., Ltd., 137 Ducess St., Toronto.  
 Georgetown Coated Paper Mills, Ltd., Georgetown.  
 \*Georgian Bay Shook Mills Ltd., Midland.  
 Gibbard Furniture Co., Napanee.  
 \*Gilpin Bros., Berford St., Warton.  
 Gilson Mfg. Co., Ltd., Guelph.  
 Globe-Wernicke Co., Ltd., The, King St., Stratford.  
 Goderich Organ Co., Ltd., The, East St., Goderich.  
 Goderich Wheel Rigs, Ltd., Maitland St., Goderich.  
 Goldie & McCullough Co., Ltd., The, Galt.  
 Goodyear Rubber & Tire Co., Bowmanville.  
 Goold, Shapley & Muir Co., Ltd., Brantford.  
 Grant, Jas., Estate of, Chesley.  
 Grant, Salisbury Mfg. Co., 83 Cathcart St., Hamilton.  
 Greer, A. B., cor. York and Talbot Sts., London.

- Guarantee Motor Co., 67 Bay St. N., Hamilton.  
 Guelph Carriage Top Co., cor. Dublin and Norwich Sts., Guelph.  
 Guelph Stove Co., Guelph.  
 Gunney Foundry Co., Ltd., The, 500 King St. W., Toronto.  
 Gurney Scale Co., James and Colborne Sts., Hamilton.  
 Hall, Jno. H. & Sons, Bridge St., Brantford.  
 Hamilton, Wm., Co., Ltd., Reid St., Peterborough.  
 Hamilton Whip Co., 119 Mary St., Hamilton.  
 \*Hamm & Nott Co., Ltd., The, Brantford.  
 Harris & Barry, Ltd., Sussex St., Ottawa.  
 Harris Lithographing Co., 468 Wellington St., Toronto.  
 Hawes, R. A., Otterville.  
 Hay, Peter, Knife Co., Ltd., 43 Victoria Ave., Galt.  
 Hespeler Machinery Co., Ltd., Hespeler.  
 Hibner, D., Furniture Co., Ltd., The, 39 Edward St., Berlin.  
 \*Hicks, W. H., Perth.  
 \*Hillecock, J., & Co., Ltd., 154 George St., Toronto.  
 Hills, Allan, Edge Tool Co., Ltd., N. Water St., Galt.  
 Hols Mfg. Co., Ltd., Ridout St., London.  
 Honest Injun Motor Co., 5 Grand Opera Lane, Toronto.  
 Hore, F. W., & Sons, Ltd., Hamilton.  
 House, Julius F., 201 Church St., Toronto.  
 \*Houston Co., Ltd., The, Tweed.  
 Huckels, A. & Co., 185 Lyon St., Ottawa.  
 Ideal Bedding Co., Ltd., 10 Jefferson Ave., Toronto.  
 Imperial Rattan Co., Ltd., 411 Albert St., Stratford.  
 Imperial Stove Works, Ltd., Morrisburg.  
 Ideal Manufacturing Co., The, Windsor.  
 International Harvester Co. of Canada, Ltd., Sherman Ave., Hamilton.  
 International Marine Signal Co., Ltd., Ottawa.  
 Irish, G. L., 499 Queen St. W., Toronto.  
 Ives Modern Bedstead Co., Ltd., Sydney St., Cornwall.  
 \*James, R. H., Simcoe St. N., Oshawa.  
 Jardine, A. B., & Co., Hespeler.  
 Jenckes Machine Co., Ltd., The, St. Catharines.  
 Johnston Foundry Co., Kemptville.  
 Jones Bros. Co., Ltd., Head St., Dundas.  
 Jones Bros. Co., Ltd., 31 Adelaide St. W., Toronto.  
 Jones & Moore Electric Co., Ltd., 296 Adelaide St., Toronto.  
 Karch, H. W., Hespeler.  
 Karn-Morris Piano & Organ Co., Ltd., Woodstock.  
 \*Kaufman, Jacob, 235 King St., Berlin.  
 Kealey's Aerated Waters, 3 McDougal Ave., Ottawa.  
 \*Kerr, I. & I. Co., Ltd., Petrolia.  
 Kerr Engine Co., Ltd., Walker Rd., Walkerville.  
 Kerr Water Motor Co., 497 King St., London.  
 \*Kilgour Mfg. Co., 25-27 Aurora St., Hamilton.  
 Knechtel Furniture Co., Ltd., Southampton, also Hanover.  
 Knechtel Kitchen Cabinet Co., Ltd., Hanover.  
 \*Kribs, W. A., Avenue St., Hespeler.  
 Krug, H., Furniture Co., Ltd., Berlin.  
 Lally Lacrosse Mfg. Co., Cornwall.  
 Lanark Ginseng Gardens Co., Lanark.  
 LePage Individual Communion Cup Co., 102 Tyndall Ave., Toronto.  
 Leslie, P., & Son, 114 Scott St., Ottawa.

- Lippert Furniture Co., Ltd., Berlin.  
 Listowel Furniture Co., Ltd., Listowel.  
 Lloyd & Sons, Ltd., Trenton.  
 Laghrin, S. M., 136 Erie St., Stratford.  
 London Foundry Co., Ltd., cor. King and Thames Sts., London.  
 London Concrete Machinery Co., Ltd., London.  
 London Gas Power Co., Ltd., Laura St., London.  
 Lye, Edw., & Sons, 18 St. Albans St., Toronto.  
 Luxfer Prism Co., Ltd., 100 King St., Toronto.  
 MacKie Buggy Co., Plattsville.  
 Madison Williams Mfg. Co., Ltd., The, Lindsay.  
 Malcolm, Andrew, Furniture Co., Ltd., The, Kincardine.  
 Malcolm & Souter Furniture Co., Ltd., Hamilton.  
 Maple Leaf Harvest Tool Co., Ltd., Tillsonburg.  
 Markdale Furniture Co., Markdale.  
 Martin Mfg. Co., Ltd., The, Brock St., Whitby.  
 Martin Pump & Machine Co., 47 Davies Ave., Toronto.  
 \*Martin, Jas., Hall St., Gore Bay.  
 \*Matthews Bros., 788 Dundas St., Toronto.  
 Matthews Church Organ Co., 491 King St. W., Toronto.  
 Maxwell, David, & Sons, St. Marys.  
 McAlpine Tobacco Co., 2 McAlpine St., Toronto.  
 McCall & Co., Main St., St. Williams.  
 McClary Mfg. Co., York and Wellington Sts., London.  
 McColl Bros. Co., 114 Don Esplanade, Toronto.  
 McCormick Mfg. Co., London.  
 \*McDonald, A., Estate, George St., Peterborough.  
 McIntosh Granite Co., Ltd., 1119 Yonge St., Toronto.  
 McIntyre, D. R., The, Furniture Co., Tillsonburg.  
 McKeough & Trotter, Ltd., 17 Thames St., Chatham.  
 \*McKinney, A. J., 156 Riddell St., Woodstock.  
 McKinnon Dash Co., Ontario St., St. Catharines.  
 McLagan, George, Furniture Co., Ltd., Trinity St., Stratford.  
 McLaughlin & Sons Co., Ltd., Owen Sound.  
 McLaughlin Carriage & Motor Car Co., Ltd., Oshawa.  
 McLaughlin & Goudlay, Elizabeth and Terauley Sts., Toronto.  
 Meadows, The Geo. B., Wire Iron & Brass Works Co., Ltd., 479 West Wellington St., Toronto.  
 Metallic Roofing Co., The, King and Dufferin Sts., Toronto.  
 Metal Shingle & Siding Co., Guelph St., Preston.  
 Methodist Book & Publishing House, Toronto.  
 Mica Co. of Canada, Ltd., 532-4 Wellington St., Ottawa.  
 Milner, Robt., 57 William St., Chatham.  
 Milner, Wm., Main St., West Lorne.  
 \*Mitchell, Walter, Port Stanley.  
 Mitchell Woolen Co., Ltd., The, Mitchell.  
 Model Incubator Co., 196 River St., Toronto.  
 Moffat Stove Co., Ltd., Denison Ave., Weston.  
 Moone, W. A., & Co., Ltd., Meaford.  
 Moore, The D., Co., Ltd., Catharine St. N., Hamilton.  
 Morrison, Jas., Brass Mfg. Co., Ltd., 93 Adelaide St. W., Toronto.  
 Mount Forest Carriage Co., Mount Forest.  
 Muskoka Foundry Co., Bracebridge.  
 National Mfg. Co., 316 Catharine St., Ottawa.  
 National Spring & Wire Co., Windsor.

- \*Neilson's Mill & Lumber Co., Bay and Front Sts., Stratford.
- Newell Mfg. Co., King St., Prescott.
- \*Nicholson Lumber Co., Brant St., Burlington.
- Nineteen Hundred Washer Co., 357 Yonge St., Toronto.
- O'Brien & Fowler, Cumming's Bridge.
- Office Specialty Mfg. Co., Ltd., 97 Wellington St. W., Toronto.
- \*Ontario Box Co., 106 Main St. E., Hamilton.
- Ontario Lantern & Lamp Co., East Cannon St., Hamilton.
- Otis-Fensom Elevator Co., Ltd., Victoria Ave. N., Hamilton.
- Otterville Mfg. Co., Ltd., cor. York and Main Sts., Otterville.
- Owen Sound Steel Press Works, Owen Sound.
- Packard Electric Co., Ltd., St. Catharines.
- Paris Winney Mills Co., Ltd., Paris.
- Park Bros., William St., Chatham.
- \*Parry Sound Lumber Co., Parry Sound (Hd. Office, Toronto).
- Patterson, Geo., & Co., Ontario St., Preston.
- Pease Foundry Co., Ltd., 36 Queen St. E., Toronto.
- Perrin, D. S., & Co., Ltd., Dundas St., London.
- Peterborough Canoe Co., Water St., Peterborough.
- Piper, N. L., Railway Supply Co., Ltd., 314 Front St. W., Toronto.
- Pink, Thomas Co., Ltd., The, Alexander St., Port Hope.
- Pratt & Whitney Co. of Canada, Ltd., Dundas.
- Prescott Emery Wheel Co., Ltd., Prescott.
- Preston Furniture Co., Ltd., Preston.
- Quality Beds Ltd., Welland.
- Queen City Foundry, Ltd., 67 Esplanade Ave. E., Toronto.
- Queen City Glass Co., Ltd., 243 Victoria St., Toronto.
- \*Queen City Planing Mill, 314 Queen St. W., Toronto.
- Rathbun Co., The, Deseronto.
- \*Rat Portage Co., Ltd., Kenora.
- Rawlinson, L., 649 Yonge St., Toronto.
- Raymond Mfg. Co., Ltd., Suffolk St., Guelph.
- Reid Bros. Mfg. Co., 1110 Queen St. W., Toronto.
- Renfrew Machinery Co., Ltd., Renfrew.
- Roblin, J. J., & Son, Brighton.
- Rodney Woodenware Co., The, Rodney.
- Roman Stone Co., Weston.
- Rosamond Woollen Co., Almonte.
- Ross & Co., Water St., Cornwall.
- Russell Motor Car Co., Toronto.
- \*Sanderson-Harold Co., Ltd., Paris.
- Schaefer, J. C., Waterloo.
- Schierholtz Furniture Co., Ltd., New Hamburg.
- Sheet Metal Products Co., Toronto.
- \*Schultz Bros. Co., Ltd., 35-49 Albion St., Brantford.
- Shantz, P. E., Fountain St., Preston.
- Sharpe & Kirkpatrick, 118 Victoria St., Sarnia.
- Sheldons, Ltd., Galt.
- Sherman Cooper Co., 1051 Eastern Ave., Toronto.
- Showcases & Fixtures, Ltd., 310-312 King St. E., Toronto.
- Shurly-Dietrich Co., Ltd., Galt.
- Skinner Co., Ltd., The, Gananoque.
- \*Smart, Jas., Mfg. Co., Ltd., The, Water St., Brockville.
- Smith, R. H., Co., Ltd., St. Paul St., St. Catharines.
- Smith Stacker & Feeder Co., Ltd., 138 Jackson St. E., Hamilton.

- Smiths Falls Malleable Castings Co., Ltd., Smiths Falls.  
 Snider, J. B., King St., Waterloo.  
 Spence, R., & Co., Hamilton.  
 St. Marys Wood Specialty Co., Ltd., St. Marys.  
 Standard Sanitary Mfg. Co., Ltd., Royce and Lansdowne, Toronto.  
 Fred Stearns & Co. of Canada, Ltd., Windsor.  
 Steel Co. of Canada, The, Gananoque.  
 Steel & Radiation, Ltd., Fraser Ave., Toronto.  
 Stevens Co. of Galt, Ltd., The, Rose St., Galt.  
 Stevenson Boiler & Engine Works, Petrolia.  
 Stewart, Jas., Mfg. Co., The, Woodstock.  
 Still, J. H., Mfg. Co., Ltd., E. St., St. Thomas.  
 Stratford Chair Co., 459 Adelaide St., Stratford.  
 Sugarman, H. H., 201 Beaver St., Ottawa.  
 Superior Barn Equipment Co.,ergus.  
 Supreme Heating Co., Ltd., Queen St., Welland.  
 Swift Motor Car Co. of Canada, Ltd., LaCroix St., Chatham.  
 Sydenham Glass Co., Wallaceburg.  
 \*Sykes, J. D., Athol St., Oshawa.  
 Taylor, J. & J., 145 Front St. E., Toronto.  
 Tayler Mfg. Co., 82 Queen St. N., Hamilton.  
 Taylor-Forbes Co., Ltd., Guelph.  
 Thomas Organ & Piano Co., Brant St., Woodstock.  
 Tolton Bros., Ltd., 12 Huskisson St., Guelph.  
 Toronto Paper Mfg. Co., Cornwall.  
 Toronto Whip Co., Birch Ave. N., Toronto.  
 Toronto Woodworking Co., 15 Fisher St., Toronto.  
 Tremblay Bros., Pembroke.  
 Trent Valley Woollen Mfg. Co., Ltd., George St., Campbellford.  
 Tucker, Geo. E., & Son Co., Ltd., Queen St. N., Hamilton.  
 Tudh. Anderson Co., Ltd., Smiths Falls, also Lindsay.  
 Tudh. Carriage Co., Orillia.  
 Underhill, Ltd., Aurora.  
 Union Drawn Steel Co., Ltd., Victoria Ave. S., Hamilton.  
 Universal Lightning Rod Co., Hespeler.  
 Valley City Seating Co., Ltd., Dundas.  
 Verity Plow Co., Ltd., Brantford.  
 Victoria Foundry Co., 196 Bridge St., Ottawa.  
 Victoria Wheel Works, Galt.  
 Walker Bin and Store Fixture Co., Ltd., The, 152 Shanley St., Berlin.  
 Walker & Clegg, Wingham.  
 Waterous Engine Works Co., Brantford.  
 Watson Smith Co., Ltd., 165 Geary Ave., Toronto.  
 Welland Vale Mfg. Co., Ltd., Lock 2, St. Catharines.  
 West, C. N., John St., Hagersville.  
 Western Foundry Co., Ltd., Wingham.  
 \*Westport Woodworking Co., Westport.  
 White, Ehrhardt & Co., 121 Logan Ave., Toronto.  
 Whitman Barnes Mfg. Co., St. Catharines.  
 Whittaker Stove Works, Windsor.  
 William Buck Stove Works, Brantford.  
 Wilson, C., & Son, 67 Esplanade Ave. E., Toronto.  
 Wood, Fred., & Son, 162 Adelaide St. W., Toronto.  
 Woodstock Wind Motor Co., Ltd., 655 Canterbury St., Woodstock.  
 Wrought Iron Range Co. of Canada, Ltd., 51-53 Vine Ave., Toronto.  
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Wunder Furniture Mfg. Co., Ltd., 280 Victoria St., Berlin.  
 \*Zimmerman Bros., Tavistock.

## TRUNK-BOXES.

East & Co., 300 Yonge St., Toronto.  
 Langmuir, L., Mfg. Co., Ltd., cor. King and Niagara Sts., Toronto.  
 McBrine, L., Co., Ltd., Charles and Water Sts., Berlin.

## BRUSHES.

Boeckh Bros. Co., Ltd., 80 York St., Toronto.  
 Brantford Brush Works, 87 Dundas St., Brantford.  
 Forest City Brush Factory, 154 Wilson Ave., London S.  
 Meakins & Sons, King St. E., Hamilton.  
 Skeddin Brush Co., 130 King St. W., Hamilton.  
 Stevens-Hopner Co., Ltd., Port Elgin.

## CARS AND COACHES.

Canadian Locomotive Co., Ltd., Ontario St., Kingston.  
 C. W. & L. E. Ry. Co., 253 King St., Chatham.  
 Crossen Car Co., Ltd., Cobourg.  
 Hamilton Steel Car Works, Crown Point, Hamilton.  
 Ottawa Car Co., Ltd., 311 Slater St., Ottawa.  
 Preston Car and Coach Co., Ltd., Preston, Ont.  
 Rathbun Car Co., Deseronto.  
 Toronto Railway Co., King and Church Sts., Toronto.

## CHAIRS.

Ball Furniture Co., Ltd., The, Durham St., Hanover.  
 Bell Furniture Co., Ltd., The, Southampton.  
 Bowman, A. M., & Co., Elmira.  
 Canada Chair Co., Ltd., Perth.  
 Canada Furniture Manufacturers, Ltd., Wingham, Woodstock and Wiarton.  
 Chesley Chair Co., Ltd., Chesley.  
 Coombe, F. E., Furniture Co., Huron Terrace, Kincardine.  
 Dymond Colonial Co's, Ltd., Strathroy.  
 Eglinton Willow Works, Eglinton.  
 Ellis Furniture Co., Thames St., Ingersoll.  
 Elmira Furniture Co., Ltd., Union St., Elmira.  
 Ferguson, Jno., & Sons, King St., London.  
 Gendron Mfg. Co., Ltd., 137 Duchess St., Toronto.  
 Glauser & Leinberger, Hanover.  
 Harris & Barry, Ltd., Sussex St., Ottawa.  
 Harriston Furniture Mfg. Co., Ltd., Harriston.  
 Hibner, The D., Furniture Co., 39 Edward St., Berlin.  
 Imperial Rattan Co., Ltd., The, 411 Albert St., Stratford.  
 Knechtel Furniture Co., Ltd., The, Hanover.  
 Krug, H., Furniture Co., Ltd., 113 Ahrens St. W., Berlin.  
 Lippert Furniture Co., Ltd., Berlin.  
 McCall & Co., Main St., St. Williams.  
 McGill Chair Co., Cornwall.

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\* Manufacture for the trade.

Mundell, Jno. C., & Co., Elora.  
 National Furniture Co., Ltd., Albert St., Berlin.  
 Neustadt Manufacturing Co., Ltd., Neustadt.  
 Oliver, J., & Son, Ltd., 21 Oliver St., Ottawa.  
 Schierholtz Furniture Co., New Hamburg.  
 Stratford Chair Co., Ltd., 459 Albert St., Stratford.  
 Stratford Mfg. Co., Ltd., Stratford.  
 Thomson, Alex., cor. York and Day Sts., Hamilton.  
 Walker & Clegg, Wingham.  
 Wunder Furniture Mfg. Co., Ltd., 280 Victoria St., Berlin.

## COFFINS, CASKETS AND SHELLS.

Ashdown, Jno., Willow Works, 92 Dundas St., Toronto.  
 Canada Casket & Lumber Co., Queen St., Rodney.  
 Elliott, Jas. S., & Son, Prescott.  
 Evel Casket Co., York St., Hamilton.  
 Gibson, Wm., Casket Co., Mount Forest.  
 Globe Casket Co., Dundas and Adelaide Sts., London.  
 Leach & Malcolm, Pembroke St., Pembroke.  
 McCormack & Carroll, 82 Adelaide St. E., Toronto.  
 Merriam J. E., & Son, Young St., Harriston.  
 National Casket Co., 93-109 Niagara St., Toronto.  
 Neville, J., & Son, Main St., Pembroke.  
 Semmens & Evel Casket Co., Ltd., Florence St., Hamilton.  
 Stoddart, M. J., Woodville.  
 Taylor, Jos. M., Tillsonburg.  
 Thompson, D. W. Co., Ltd., 54 Hayter St., Toronto.  
 Tickell & Sons Co., Front St., Belleville.

## COOPERAGE.

Ainslee, J. S., & Bro., Comber.  
 Algoma Commercial Co., Ltd., Sault Ste. Marie.  
 Ament, Philip, Brussels.  
 Ament, Wm., Seaforth.  
 Bartholomew, Henry, Vanessa.  
 Beggy, Wm., St. Catharines.  
 Bowman, D., Floradale.  
 Bogue, Jas. R., Strathroy.  
 Bowman, Levi, St. Jacobs.  
 Burrowelough, E., Wesleyville.  
 Campbell, Jno., St. Thomas.  
 Canada Wood Specialty Co., Orillia.  
 Canadian Cooperage Co., Galetta (also Sand Point).  
 Canadian Salt Co., Windsor.  
 Cane, Wm., Sons Co., Ltd., Newmarket.  
 Cargill, H., & Sons, Cargill.  
 Carter, W. W., Fesserton.  
 Cherry, S. J., Preston.  
 Chrysler, Wm., Windham Centre.  
 Coates, J. B., Dutton.  
 Cornell Brewing & Malting Co., Ltd., Lindsay.  
 Côté, E. & Co., L'Orignal.  
 Cotrel, Jno., Creemore.  
 Coultes, Geo. & Sons, Thedford.

Craig, Henry, Woodstock.  
Cuntz, Jacob H., Conestogo.  
Davies, D., Waterdown.  
Delaney, Thos. & Co., 471 King St. E., Toronto.  
Dice, S., Milton.  
Dickinson, W. H. B., Zion.  
Dominion Cooperage Co., Brighen.  
Drader, W. M., Chatham.  
Dudley, H. W., Newcastle.  
Dunlop, R., Napier.  
Edwardsburg Starch Co., Cardinal.  
Everest, G. M., Arkona.  
Farwell Cooperage Co., Oshawa.  
Frankford Cooperage Co., Frankford.  
Frayne, Samuel, Iroquois.  
French, Jno. R., & Co., Melville.  
Gillies, S., & Sons, Ailsa Craig.  
Georgian Bay Fruit Growers, Clarksburg.  
Grant's Spring Brewery Co., Ltd., Hamilton.  
Hamilton Distillery Co., Ltd., Hamilton.  
Hargadon, Owen, 52 Walnut St., Brantford.  
Hayes, Harry, Springfield.  
Hoey, Jno. J., Thornburg.  
Hoffman, J. H., Plattsville.  
Huehn, C. N., Waterloo.  
Imperial Steel & Wire Co., Collingwood.  
Kingdom, Geo., 32 Barnard Ave., Peterborough.  
Kinmount Cooperage Co., Kinmount.  
Landreville, Jos., Toronto.  
Larue, S., Mountain.  
Lawrie, Andrew, Forest.  
Letson, Wm. J., West Montrose.  
London & Petrolia Barrel Co., London.  
Malloy & Bryant, 77 Ritchie Ave., Toronto.  
Manning, Jno. G., Bowmanville.  
Marmora Cooperage Co., Marmora.  
Martin, W. J., & Co., Hillsdale.  
McAllister, Geo., Bloomingdale.  
McElroy, W. H., Blyth.  
McEwen, Geo., Hensall.  
McPherson, D. J., South Lancaster.  
Merritt & Co., Stratford.  
Mitchell, T. G., Watford.  
Mitchell, T. W., Forest.  
Mulloy & Bryans, Haliburton.  
Parish, W. G., Athens.  
Pierson, Jno., Stevensville.  
Quick & McMurtry, Bowmanville.  
Ramsay, H., 79 Dundas St., London.  
Reekie, Geo., & Son, Heathcote.  
Reid, W. I., Co., Ayr.  
Roid, Colin Jr. & Bro., Bothwell.  
Reid Bros., Picton.  
Saunders, S., & Son, Watford.  
Schans, N. V., Glammis.

Sheppard, J. C., Kirkfield.  
Shirk & Snider, Bridgeport.  
Spence & Denholm, Tara.  
Stark, F. J., Foxmead.  
Sutherland-Innes Co., Ltd., Chatham.  
Thompson, W. R., & Co., Teeswater.  
Trenton Cooperage Co., Trenton.  
Trenton Cooperage Co., Marmora.  
Trott, W., Oil City.  
Urquhart, D., Hensall.  
Walker, Hiram, & Sons, Ltd., Walkerville.  
Wallaceburg Cooperage Co., Ltd., Wallaceburg.  
Watson, Neil, Mull.  
Webster & Co., 274 Stewart St., Ottawa.  
Weilers, Chris., Formosa.  
Wiley, Francis J., Nottawa.  
Wisner, S., Grimsby.  
Woods Bros., Roblin.  
Zimmerman Bros., Tavistock.

## FRUIT BASKETS AND CRATES.

Anglin, Frank, Brewers Mills.  
Beach, F. W., Iroquois.  
Brown, A., Godfrey.  
Bundscho, Jacob, Milverton.  
Campbell Bros., Ventnor.  
Canada Wood Specialty Co., Ltd., Orillia.  
Carriera, Adelard, Curran.  
Coulthart, M. E., Monkland Station.  
Dalton, J. W., Ltd., Stony Creek, Burlington, Grimsby.  
Dunlop, R., Napier.  
Erie Basket Co., Leamington.  
Erskine Bros., Rockland.  
Everest, Geo. M., North St., Arkona.  
Excelsior Basket Co., Clarksburg.  
Fraser, W. R., Felton.  
Greenlees, J., Forest.  
Hambly, H., Purple Valley.  
Janes, C. B., & Co., Orillia.  
Keenan Woodenware Mfg. Co., Ltd., Owen Sound.  
Knight, G. T. & Son, Meaford.  
Mann, E. H., & Co., 173 Dalhousie St., Peterborough.  
Morgan, Jno., Spring Brook.  
Niagara Veneer & Basket Co., Ltd., Prospect St., Parry Sound.  
Reid & Pratt, Beamsville.  
Rodney Woodenware Co., Rodney.  
Schell, J. T., Co., Alexandria.  
Wight, R. T., Thorndale.

## HALF-TONE BLOCKS.

Alexander Engraving Co., Ltd., 352 Adelaide St., Toronto.  
Central Press Agency, 70 Pearl St., Toronto.  
J. L. Jones Engraving Co., Ltd., 16 Adelaide St. W., Toronto.  
Legg Bros. Engraving Co., 5 Jordan St., Toronto.

Methodist Book and Publishing House, 29 Richmond St. W., Toronto.  
 Ontario Engraving Co., 16 Rebecca St., Hamilton.

## HANDLES.

Bissell Carpet Sweeper Co., Niagara Falls.  
 Boeckh Bros. Co., Ltd., 80 York St., Toronto.  
 Brown, Jno. E., 77 McNab St. N., Hamilton.  
 Burrow, Stewart & Milne Co., Ltd., cor. Cannon and Hughson Sts., Hamilton.  
 Cameron Dunn Mfg. Co., Strathroy.  
 Canada Stamp and Stencil Co., 153 Victoria St., Toronto.  
 Canada Steel Goods Co., Ltd., Arthur St., Hamilton.  
 Canada Wood Specialty Co., Orillia.  
 Canadian Logging Tool Co., Ltd., Sault Ste. Marie.  
 Canadian Shovel and Tool Co., Imperial St., Hamilton.  
 Columbia Handle and Lumber Co., London.  
 Cox, Albert, 50 Geneva St., St. Catharines.  
 Crawford, W. C., Co., Ltd., Tilbury.  
 Ebert, A. T., Wiarton.  
 Edwards, Jas. & Co., 126 Garden Ave., Toronto.  
 Erie Basket Co., Ltd., Leamington.  
 Finlay, J., & Sons Co., Norwood.  
 Fort William Broom Mfg. Co., 710 McTavish St., Fort William.  
 Frost & Wood Co., Ltd., Smiths Falls.  
 Grant Salisbury Mfg. Co., Ltd., 83 Cathcart St., Hamilton.  
 Hahn, Geo. W., Wiarton.  
 Hamel, Irvin W., Young St., Waterloo.  
 Hamilton Whip Co., 119 Mary St., Hamilton.  
 Henderson, R. J., Front St., Bobcaygeon.  
 Hills, Allan, Edge Tool Co., Ltd., Galt.  
 Irving Umbrella Co., Ltd., 79-83 Wellington St. W., Toronto.  
 Klemmer, G., Elora St., Clifford.  
 Lee, W. G., Holland Centre.  
 Maple Leaf Harvest Tool Co., Ltd., Tillsonburg.  
 Meakins & Sons, King St. E., Hamilton.  
 Meyer, F. C., Elmira.  
 Mills, A. Lincoln, Brock St., Merrickville.  
 Parker Broom Co., 692 Wellington St., Ottawa.  
 Pinder, W., Leamington.  
 Pink, Thos., Co., Ltd., Alexander St., Pembroke.  
 Radiant Electric Co., Ltd., Grimsby.  
 Renfrew Machinery Co., Ltd., Renfrew.  
 Robertson, P. L., Mfg. Co., Ltd., Milton.  
 Scarlett, Wm., 381½ Glebe St., London.  
 Schiebel, J. L., 200 Lancaster St., Berlin.  
 Schiedel, A. T., 35 King St. E., Berlin.  
 Shurly & Dietrich Co., Ltd., Galt.  
 Smart, Jas., Mfg. Co., Ltd., Water St., Brockville.  
 Smith, R. H., Co., Ltd., St. Paul St., St. Catharines.  
 St. Marys Wood Specialty Co., Ltd., St. Marys.  
 Stevens-Hepner Co., Ltd., Port Elgin.  
 Still, J. H., Mfg. Co., Ltd., Elm St., St. Thomas.  
 Toronto Stamp and Stencil Works, Ltd., 127 Church St., Toronto.  
 Toronto Whip Co., 26 Birch Ave. W., Toronto.  
 Welland Vale Mfg. Co., Ltd., Lock 2, St. Catharines.  
 Whitman Barnes Mfg. Co., St. Catharines.

## HARDWOOD FLOORING.

Ament, P., Brussels.  
Atchison & Co., Second St., Cornwall.  
Avey Bros., 131 Clarence St., Brantford.  
Avey-O'Laughlin Lumber Co., 92 Grey St., Brantford.  
Ball Planing Mill Co., Ltd., The, Bayfield St., Barrie.  
Bamford Bros., Listowel.  
Batts, Ltd., 374 Pacific Ave., West Toronto.  
Becker, Conrad D., Wellesley.  
Botterill, J. W., Lakefield.  
Bowen, G. B., Warkworth.  
Bowman, The J. H., Lumber Co., Ltd., King St. W., Dundas.  
Braithwaite, J., & Co., Crysler.  
Brennen, M., & Sons Mfg. Co., King William St., Hamilton.  
Bristol, N., Madoc.  
Brockville Lumber Co., Ltd., William and Lewis Sts., Brockville.  
Builders' Lumber and Supply Co., Division St., Welland.  
Calder, N., Listowel.  
Canada Wood Specialty Co., Ltd., Orillia.  
Carew, Jno., Lumber Co., Ltd., Lindsay.  
Cavers, Jas., & Son, Carleton Place.  
Chippewa Lumber Co., Southampton.  
Clark, Zenus, Durham.  
Corcoran, P. J., 306 St. Clarens Ave., Toronto.  
Dashwood Planing Mill Co., Dashwood.  
Davidson, Jas., Wellington St., Ottawa.  
Davidson Supply Co., Brighton.  
Davidson, Jno., William St., Smiths Falls.  
Denniss, W. C., Bracebridge.  
DesRivieres, J. A., 240 Church St., Ottawa.  
Eaton, J. R., & Sons, Ltd., Orillia.  
Eckel, Mrs. C. T., Killaloe Stn.  
Fenelon Falls Planing Mill, Fenelon Falls.  
Finch Electric Light and Lumber Mfg. Co., Ltd., Finch.  
Fox & Co., 432 King St. W., Toronto.  
Gay, H., & Sons, Athol St., Oshawa.  
Georgian Bay Shook Mills, Ltd., Midland.  
Gibson Bros., Lucan.  
Gilchrist, Jno. C., 188 Perth Ave., Toronto.  
Gorvett, W. G., Arthur.  
Gray, Geo., & Sons, Mill St.      riston.  
Green Lumber Co., Ltd., 1 W.      St., St. Thomas.  
Hancock, T. H., 1372 Bloor St., Toronto.  
Harrison, J., & Sons, Ltd., 1417 Second Ave., Owen Sound.  
Haugh, Geo. C., 117 Church St., Windsor.  
Henderson & Montgomery, Dundalk.  
Hewitt, Jas. A., Beamsville.  
Higginson, J. G., Main St., Hawkesbury.  
Houston Co., The, Ltd., Tweed.  
Hill, Luxton, Blyth.  
Ingle Planing Mill, The, Lindsay.  
Innes, L., & Sons, Richmond Hill.  
Irons & Winnacott, cor. King and Queen Sts., Huntsville.  
Kalbfleisch, F. C., Zurich.  
Kaufman, Jacob, 235 King St., Berlin.  
Kerr, G. A., Creemore.

- Knight, G. T., Meaford.  
 Knight Bros. Co., Ltd., Burks Falls.  
 Kribs, W. A., Avenue St., Hespeler.  
 Laidlaw Lumber Co., Ltd., R., 65 Yonge St., Toronto.  
 Laird Bros., Camden St., Dresden.  
 Laverdure, E., Eastview Ottawa.  
 Light, R., Napance.  
 Lymburner, A. M., Planing Mill, Cayuga.  
 Mason, Geo. M., Ltd., Wellington St., Ottawa.  
 McCabe, R. I., cor. Queen and Albert Sts., Tottenham.  
 McCallum, Benj. G., Jane St., Palmerston.  
 McKay, A. H. & J. H., Tiverton.  
 McKenzie, Thos., Clinton.  
 McLaurin, Jno. R., Jr., Vankleek Hill.  
 McMullen, M. F., Ripley.  
 McPhee, Neil, Main St., Park Hill.  
 Metcalfe, Levi, Tottenham.  
 Mitchell, Alfred, Powassan.  
 Mitchell & Graham, Stinson St., Rodney.  
 Mundell, B., Erin.  
 Muskoka Wood Mfg. Co., Huntsville.  
 Mustard, Geo., Creemore.  
 Nicol Bros., 9th Ave. W., Owen Sound.  
 Nicholson Lumber Co., Brant St., Burlington.  
 Nicholson & Beveridge, 229 Catharine St. N., Hamilton.  
 Patterson-Tilley Co., cor. Cathcart and Robert Sts., Hamilton.  
 Perth Planing Mill, Kippen St., Perth.  
 Pearce Co., Ltd., Main St., Marmora.  
 Piggott, Jno., & Sons, King St., Chatham.  
 Pringle Co., Coleman St., Belleville.  
 Quance Bros., Delhi.  
 Rathbone, Geo., Ltd., 10 Northcote Ave., Toronto.  
 Restall, R. A., & Co., 1074 Queen St. E., Toronto.  
 Richardson, Udney, Elora.  
 Roger, Thos., 49 Mary St., Barrie.  
 Ross & Co., Water St., Cornwall.  
 Schell, J. T., Co., Alexandria.  
 Schwalm, Geo., & Sons, Mildmay.  
 Seaman Kent Co., Ltd., Mission St., Fort William.  
 Seaman Kent Co., Ltd., Boucher St., Meaford.  
 Simon Bros., Warton.  
 Simon Co., Ltd., Confederation Life Bldg., Toronto.  
 Snelgrove, Jas., Beaverton.  
 Stewart, Walter, & Sons, Lucknow.  
 Stoneburg, M. H., Perry Avenue, Brighton.  
 Tessier, Alphonse, Penetanguishene.  
 Truax, R., & Son, Walkerton.  
 Vankleek Hill Mfg. Co., Ltd., Mill St., Vankleek Hill.  
 Walton, Geo. & Co., Mill St., Belleville.  
 Welsh, Wm., Hensall.  
 West & Jackson, Tillsonburg.  
 Westport Woodworking Co., Westport.  
 White, Geo. J., 165 Main St. E., Hamilton.  
 Wilson Bros., Ltd., Collingwood.  
 Woodstock Lumber and Mfg. Co., Ltd., The, cor. Huron and Canterbury Sts., Woodstock.

## HOUSEHOLD FURNITURE

Andrews Wire Works of Canada, Ltd., Watford.  
Anthes Furniture Co., 242 Breithaupt St., Berlin.  
Baird Bros., Plattsville.  
Beach, M. F., Co., Ltd., The, Winchester.  
Beach Furniture Co., Sydney St., Cornwall.  
Bell Furniture Co., Ltd., Southampton.  
Benson & Bray, Midland.  
Berlin Furniture Co., Ltd., The, Berlin.  
Bilton, Geo. E., 53 Sullivan St., Toronto.  
Bis-sell Carpet Sweeper Co., Niagara Falls South.  
Cabinet Shop, The, 548 Yonge St., Toronto.  
Canada Furniture Manufacturers, Woodstock.  
Canada Wood Specialty Co., Orillia.  
Canadian Feather and Mattress Co., Ltd., 41-47 Spruce St., Toronto.  
Chesley Furniture Co., Ltd., Chesley.  
Crescent Couch Co., 570 Richmond St. W., Toronto.  
Crown Furniture Co., King St., Preston.  
Dinsmore, Arthur J., 7 Bloor St. E., Toronto.  
Dominion Lighthouse Depot, Prescott.  
Durham Furniture Co., Ltd., Lampton St., Durham.  
Dymond Colonial Co's, Ltd., Strathroy.  
Eglinton Willow Works, The, 2261 Yonge St., Eglinton.  
Ellis Furniture Co., Thames St., Ingersoll.  
Elmira Furniture Co., Ltd., Elmira.  
Elmira Interior Woodwork Co., Young St., Elmira.  
Elora Furniture Co., Elora.  
Ewing & Murphy, 18 Cameron St., Toronto.  
Ferguson, Jno., & Son, 174-180 King St., London.  
Gendron Mfg. Co., Ltd., 137 Duchess St., Toronto.  
Gibbard Furniture Co., Ltd., Napanee.  
Gilpin Bros., Beresford St., Ontario.  
Glaeser & Leinberger, Hanover.  
Gold Medal Furniture Mfg. Co., Ltd., Van Horne and Bartlett Sts., Toronto.  
Hamm & Nott Co., Ltd., The, Brantford.  
Hamel Furniture and Upholstering Co., Mildmay.  
Harris & Barry, Ltd., Sussex St., Ottawa.  
Harriston Furniture Co., Ltd., Harriston.  
Hartshorn, Stewart Co., 54-60 River St., Toronto.  
Heimbicher & Jung, Elmira.  
Hepworth Mfg. Co., Bruce St., Hepworth.  
Hibner, D., Furniture Co., Ltd., The, 39 Edward St., Berlin.  
Hillock, Jno. & Co., Ltd., 154 George St., Toronto.  
Ideal Bedding Co., Ltd., The, 10 Jefferson Ave., Toronto.  
Imperial Rattan Co., Ltd., 411 Albert St., Stratford.  
Jeffries, Thos., 359 Talbot St., London.  
Karch, C., Dundas.  
Kensington Furniture Co., Goderich.  
King Furniture Co., Don Esplanade Ave., Toronto.  
Knechtel Furniture Co., Ltd., Southampton, also Hanover.  
Knechtel Kitchen Cabinet Co., Ltd., Hanover.  
Knechtel, S., Wood-turning Co., Southampton.  
Krug Bros. Co., Ltd., Chesley.  
Krug, H., Furniture Co., Ltd., 113 Ahrens St., W., Berlin.  
Leach & Malcolm, Pembroke St., Pembroke.

Legg, Wm. C., 134 Queenston St., St. Catharines.  
 Lippert Furniture Co., Ltd., Berlin.  
 Listowel Furniture Co., Ltd., Listowel.  
 Lucknow Furniture Co., Ltd., Lucknow.  
 Malcolm, Andrew, Furniture Co., Ltd., Kincardine.  
 Malcolm & Souter Furniture Co., Ltd., Hamilton.  
 Markdale Furniture Co., Markdale.  
 Maydwell Mfg. Co., 65 Sault St., Toronto.  
 McCall & Co., Main St., St. Williams.  
 McKay, E., Oil Springs.  
 McLagan, Geo., Furniture Co., Ltd., Trinity St., Stratford.  
 Meaford Mfg. Co., Meaford.  
 Mills, A., Lincoln, Merrickville.  
 Mills, A., Merrickville.  
 Neville, J., & Son, Main St., Pembroke.  
 Oliver, J. & Sons, Ltd., 21 Oliver St., Ottawa.  
 Ontario Spring Bed and Mattress Co., Ltd., 90 York St., London.  
 Ottawa Upholstering Co., 316 Wellington St., Ottawa.  
 Otterville Mfg. Co., Ltd., Otterville.  
 Peterborough Mattress Co., 3 Hunter St. E., Peterborough.  
 Piggott, Jno., & Sons, King St., Chatham.  
 Rawlinson, L., 649 Yonge St., Toronto.  
 Raymond Mfg. Co., Ltd., Suffolk St., Guelph.  
 Read, Jas., 254-256 Princess St., Kingston.  
 Roadhouse, N. J., Newmarket.  
 Rudd & Co., Arnprior.  
 Schierholtz Furniture Co., Ltd., Arnold St., New Hamburg.  
 Spiesz Furniture Co., Hanover.  
 Standard Bedding Co., Toronto.  
 Stevens, T. G., Athens.  
 Stratford Chair Co., Ltd., 459 Albert St., Stratford.  
 Strathroy Furniture Co., Strathroy.  
 Thomson, Alex., cor. York and Day Sts., Hamilton.  
 Tickell & Sons Co., Front St., Belleville.  
 Toronto Bamboo and Furniture Co., 87 Richmond St. W., Toronto.  
 Toronto Furniture Co., Ltd., Dufferin St., Toronto.  
 Walker & Clegg, Wingham.  
 Warner Bros., 64 Milan St., Toronto.  
 Widespread Implement Co., Ltd., Port Dover.  
 Woodstock Spring Mattress Co., The, 263 Dundas St., Woodstock.  
 Wunder Furniture Mfg. Co., Ltd., 280 Victoria St., Berlin.

## KITCHEN CABINETS.

Dairs, Jno., 7 Frank St., St. Catharines.  
 Ferguson, Jno., & Son, 174-180 King St., London.  
 Hepworth Mfg. Co., Bruce St., Hepworth.  
 Kensington Furniture Co., Goderich.  
 Knechtel Kitchen Cabinet Co., Ltd., The, Hanover.  
 Leo Mfg. Co., Ltd., Pembroke.  
 Listowel Furniture Co., Ltd., The, Listowel.

## LADDERS.

Cowan, Estate of O. D., Gananoque.  
 Excelsior Basket Co., Clarksburg.

Georgian Bay Ship Building and Wrecking Co., Midland.  
 I. X. L. Ladder Co., 663 Bathurst St., London.  
 Karch, C., Dundas.  
 McFarlane Ladder Works, 158-160 Rivers St., Toronto.  
 Otterville Mfg. Co., Otterville.  
 Stratford Mfg. Co., Stratford.  
 Taylor, Scott Co., Toronto.  
 Waterous Engine Works, Brantford.

## LAUNDRY ACCESSORIES.

Cane, Wm., & Sons, Ltd., The, Huron St., Newmarket.  
 Connor, J. H., & Son, Ltd., Pretoria Ave., Ottawa.  
 Cummer-Dowsell, Ltd., Elgin St., Hamilton.  
 Erie Iron Works, Ltd., 102-112 Talbot St., St. Thomas.  
 Hilborn Co., The, Ayr.  
 London Foundry Co., Ltd., The, cor. King and Thames St., London.  
 Maxwell, David, & Sons, St. Marys.  
 McFarlane Ladder Works, 158-160 River St., Toronto.  
 Meyer Bros., 112 Adelaide St. E., Toronto.  
 Nineteen Hundred Washer Co., 357 Yonge St., Toronto.  
 Otterville Mfg. Co., Ltd., The, cor. York and Main Sts., Otterville.  
 Schultz Bros. Co., Ltd., 35-49 Albion St., Brantford.  
 Springfield, Chas., 208 George St., Toronto.  
 Taylor-Forbes Co., Ltd., Guelph.  
 Taylor, Scott & Co., Toronto.  
 Toronto Laundry Machine Co., Ltd., The, 803 Dundas St., Toronto.  
 Trenton Laundry Machine Co., Ltd., The, Trenton.  
 White, Ehrhardt & Co. (One Minute Washer Co.), 121 Logan Ave., Toronto.  
 Wortman & Ward Co., Ltd., The, 519-541 York St., London.

## MANTELS.

Elmira Interior Woodwork Co., Young St., Elmira.  
 Fox Bros. & Co., Ltd., Windsor.  
 Hamilton, Alex., Mantel Co., 420 Talbot St., London.  
 Moone, W. A., Co., Ltd., Meaford.  
 Schell, J. T., Co., The, Alexandria.

## MUSICAL INSTRUMENTS.

Barthelms, A., Co., Ltd., Noble St., Toronto.  
 Bell Piano and Organ Co., Ltd., The, Guelph.  
 Bennewitz Mfg. Co., The, Stratford.  
 Blundall Piano Co., Toronto.  
 Brown, Edwin, 88 Albion St., Brantford.  
 Dominion Organ and Piano Co., Ltd., The, Temperance St., Bowmanville.  
 Evans Bros. Piano Co., Ingersoll.  
 Foster Armstrong Co., Ltd., 246 King St. W., Berlin.  
 Gerhard Heintzman, Ltd., Sherburne St., Toronto.  
 Goderich Organ Co., Ltd., The, East St., Goderich.  
 Gourlay, Winter & Leeming, 188 Yonge St., Toronto.  
 Grinnell Bros., 10-12 Chat St., Windsor.  
 Hay & Co., Norwich Rd., Woodstock.  
 Higel, Otto, Co., Ltd., 680 King St., Toronto.  
 Heintzman & Co., Ltd., Toronto.

Karn-Morris Piano and Organ Co., Ltd., Lis'wal, also Woodstock.  
 Loose, J. M., & Sons, 349 Carlaw Ave., Toronto.  
 Lye, Edw., & Sons, 18 St. Albans St., Toronto.  
 Martin-Orme Piano Co., Ltd., The cor. Sparks and Lyon Sts., Ottawa.  
 Mason & Nisch, Ltd., 642 King St. W., Toronto.  
 Matthews Church Organ Co., 191 King St. W., Toronto.  
 McCormack & Carroll, 82 Adelaide St. E., Toronto.  
 Mitchell, Thos., 6 College St., Toronto.  
 Newcombe Piano Co., Ltd., 19-21 Richmond St. W., Toronto.  
 Nordheimer Piano and Music Co., Hook Ave., West Toronto.  
 Reid Bros. Mfg. Co., 1110 Queen St. W., Toronto.  
 Stanley, Frank, 121 De Grassi St., Toronto.  
 Thomas Organ and Piano Co., Woodstock.  
 Whaley, Royce & Co., Ltd., 237 Yonge St., Toronto.  
 Williams Piano Co., Ltd., The, Oshawa.

## NOVELTIES.

Chatham Malleable and Steel Mfg. Co., Chatham.  
 Cline, J. W., Aylmer (Elgin Co.).  
 Gendron Mfg. Co., Ltd., 137 Duchess St., Toronto.  
 Goderich Wheel Rigs, Ltd., Maitland St., Goderich.  
 Grant Salisbury Mfg. Co., The, 83 Cathcart St., Hamilton.  
 Hurndall Novelty Furniture Co., Ltd., Orangeville.  
 James Bros. Foundry Co., Perth.  
 King Furniture Co., Don Esplanade, Toronto.  
 Lloyd & Son, Ltd., Trenton.  
 Lufkin Rule Co. of Canada, Ltd., The, 165 Caron St., Windsor.  
 Manning, Jas. A., 85 Richmond St. W., Toronto.  
 McKay, E. M., Oil Springs.  
 Patterson & Heward, 319 West King St., Toronto.  
 Schultz Bros. Co., Ltd., 35-49 Albion St., Brantford.  
 Shantz, P. E., Fountain St., Preston.  
 Taylor, Scott & Co., Toronto.  
 Toronto Wood-turning Works, 112 Adelaide St. W., Toronto.  
 Toronto Wood-working Co., 15 Fisher St., Toronto.  
 Uneeda Specialty Mfg. Co., 236 Gladstone Ave., Toronto.  
 Young Bros. Co., 3 Jarvis St., Toronto.

## OFFICE FURNITURE AND STORE FIXTURES.

Baird Bros., Plattville.  
 Berlin Interior Hardwood Co., Ltd., The, 72 Wilmot St., Berlin.  
 Beverly Wood Specialty Co., 83 Richmond St., Toronto.  
 Bogart, E. M., North Bay.  
 Brown & Co., Ltd., Water St., St. Marys.  
 Burton & Baldwin Mfg. Co., Ltd., The, 24-34 Sanford Ave. N., Hamilton.  
 Canada Jewelry Case Co., Ltd., The, 48-50 Lombard St., Toronto.  
 Canada Furniture Mfgs., Ltd., Jarvis St., Seaforth.  
 Canadian Office and School Furniture Co., Preston.  
 Canadian Showcase Co., Ltd., 333 Adelaide St. W., Toronto.  
 Century Telephone Construction Co., Bridgeburg.  
 Coulter, J., Co., of Toronto, Ltd., The, 45 Lombard St., Toronto.  
 Rivieres, J. A., 240 Church St., Ottawa.  
 Dominion Office and Store Fitting Co., 1115-1125 Dundas St., London.  
 Dominion Telephone Co., Ltd., Waterford.  
 Ellis, P. W., & Co., 2 Wellington St. E., Toronto.

Elmira Interior Woodwork Co., Young St., Elmira.  
 Globe-Wernicke Co., Ltd., The, King St., Stratford.  
 Green Bros., 80 Richmond St. W., Toronto.  
 Gould, T., 164 John St., Toronto.  
 Hamilton, Alex., Mantel Co., 420 Talbot St., London.  
 Haugh, Geo. C., 117 Church St., Windsor.  
 Hedley, S., Lumber Co., Ltd., The, 47 Wellington St., Chatham.  
 Hibner, D., Furniture Co., The, 30 Edward St., Berlin.  
 Hughes, Jos., Teeswater.  
 Jones Bros. Co., Ltd., Head St., Dundas.  
 Jones Bros. Co., Ltd., 31 Adelaide St., Toronto.  
 Knechtel Furniture Co., Ltd., Hanover.  
 Krug Bros. Co., Ltd., Chesley.  
 Kyle's Cabinet Works, Ltd., 326-336 Bridge St., Ottawa.  
 Lacelle, F., St. Eugene.  
 Legg, Wm. C., 134 Queenston St., St. Catharines.  
 Library Bureau of Canada, Ltd., Isabella St., Ottawa.  
 McIntyre Furniture Co., D. R., Baldwin St., Tillsonburg.  
 McKenzie, Thos., Clinton.  
 McLaughlin & Gourlay, Elizabeth and Terauley Sts., Toronto.  
 Newbigging Cabinet Co., Ltd., 164 ... St. W., Hamilton.  
 Office Specialty Mfg. Co., 97 Wellington St., Toronto.  
 Ontario Show Case Co., Toronto.  
 Ottawa Stair Works, Ottawa.  
 Peterboro Showcase Co., 709 Water St., Peterborough.  
 Preston Furniture Co., Ltd., Preston.  
 Queen City Planing Mill, 314 Queen St., Toronto.  
 Schell, J. T. Co., The, Alexandria.  
 Scott, J. C. & Co., Ltd., 90-108 River St., Toronto.  
 Showcases and Fixtures, Ltd., 310-312 King St. E., Toronto.  
 Simpson, Robt., Co., Ltd., The, 160 Yonge St., Toronto.  
 Snider, J. B., King St., Waterloo.  
 Stratford Chair Co., Ltd., 459 Albert St., Stratford.  
 Tait & Co., King St. E., Toronto.  
 Taylor, J. & J., 145 Front St. E., Toronto.  
 Toronto Showcase Co., Toronto.  
 Toronto Wood Specialty Co., Toronto.  
 Walker Bin and Store Fixture Co., Ltd., The, 152 Shanley St., Berlin.  
 Westport Woodworking Co., Westport.  
 Wood, H. L., 18 Cameron St., Toronto.  
 Woodstock Lumber and Mfg. Co., Ltd., The, cor. Huron and Canterbury Sts., Woodstock.  
 Woolnough, J. W., 15 Fisher St., Toronto.

## PATTERNS AND MACHINERY.

American Radiator Co., Market St., Brantford.  
 American Computing Co. of Canada, 19 Hunter St., Hamilton.  
 Alsop Process Co. of Canada, Ltd., 472 King St. W., Toronto.  
 Angrove, Thos. B., cor. King and Queen Sts., Kingston.  
 Arlington Co., of Canada, Ltd., 58 Fraser Ave., Toronto.  
 Baird, Wm., 568 Dundas St., Woodstock.  
 Baird, H. C., Son & Co., Parkhill.  
 Barber & Co., Ontario St., Toronto.  
 Barber, C. & Sons, Meaford.  
 Beach Foundry Co., Ltd., Winchester.

Berg Machinery Mfg. Co., Ltd., Bathurst and Niagara Sts., Toronto.  
 Berlin Foundry, 46 Water St., Berlin.  
 Bertram, Jno., & Sons Co., Ltd., Dundas.  
 Black, Robt., 4 Catharine St., St. Catharines.  
 Bowes Jamieson, Ltd., 519 King St. E., Hamilton.  
 Bowmanville Foundry Co., Ltd., Bowmanville.  
 Brown Boggs Co., Ltd., Hamilton.  
 Buck, Wm., Stove Co., Brantford.  
 Burrow, Stewart & Milne Co., Ltd., cor. Cannon and Hughson Sts., Hamilton.  
 Butterworth Foundry Co., Ltd., Broad St., Ottawa.  
 Canada Foundry Co., Ltd., Shipyards.  
 Canada Foundry Co., Ltd., 212 King St. W., Toronto.  
 Can. Gen. Electric Co., Ltd., Peterborough.  
 Canada Iron Corporation, Ltd., Foundry Dept., Midland.  
 Canada Iron Corporation, Ltd., Fort William.  
 Canada Machinery Corporation, Ltd., Concession St., Galt.  
 Canada Machinery Corporation, Ltd., Preston.  
 Canada Steam Pump and Machine Co., 97 Richmond St. E., Toronto.  
 Canada Wire and Iron Goods Co., 182-6 King William St., Hamilton.  
 Canadian Billings & Spencer, Ltd., Welland.  
 Canadian Fairbanks Morse Co., Ltd., 1379 Bloor St. W., Toronto.  
 Canadian Locomotive Co., Ltd., Ontario St., Kingston.  
 Canadian Westinghouse Co., Ltd., Princess St., Hamilton.  
 Canadian Heating and Ventilating Co., Ltd., 2362 Third Ave. E., Owen Sound.  
 Chaudiere Machine and Foundry Co., Ltd., 85 Duke St., Ottawa.  
 Carr, Jno., 18 Mary St., Hamilton.  
 Chadwick Bros., Ltd., Oak Ave., Hamilton.  
 Chapman Engine and Mfg. Co., Ltd., Dundas.  
 Clarke Brothers, 158-164 Duke St., Toronto.  
 Conner Machine Co., Ltd., Exeter.  
 Cooley, H. W., Machine Co., 321 Howland Ave., Toronto.  
 Corbet Foundry and Machine Co., Owen Sound.  
 Cunningham & Son, St. Paul St., St. Catharines.  
 Darrow, J. A., Foundry, Tillsonburg.  
 Davidson & Crooks, 1025 Wellington St., Ottawa.  
 Davis, Jno. D., Foundry, Morrisburg.  
 Dixon Mfg. Co., Collingwood.  
 Doherty Mfg. Co., Ltd., Vidal St. S., Sarnia.  
 Doig, A. E. & Co., 61 Nelson St., Toronto.  
 Dominion Rock Drill and Foundry Co., Mill St., Nanawau.  
 Downer Pattern Works, 172 King St. W., Toronto.  
 Dymond Gas and Engine Co., Ltd., 1511 Queen St. E., Toronto.  
 Erie Iron Works, Ltd., 102-112 Talbot St., St. Thomas.  
 Findlay Bros. Co., Ltd., Carleton Place.  
 Fittings Limited, Oshawa.  
 Fleck, Alex., Ltd., 428 Wellington St., Ottawa.  
 Gilson Mfg. Co., Ltd., Guelph.  
 Goldie & McCulloch Co., Ltd., Galt.  
 Goold, Shapley & Muir Co., Ltd., Brantford.  
 Green, G. Walter Co., Ltd., Peterborough.  
 Greer, Wm. & I. G., 2 Church St., Toronto.  
 Guelph Stove Co., Guelph.  
 Gurney Scale Co., James and Colborne Sts., Hamilton.  
 Gurney Foundry Co., Ltd., 500 King St. W., Toronto.  
 Hall, Jno. H. & Sons, Foundry Co., Gray St., Brantford.

- Hamilton, Wm., Co., Ltd., Reid St., Peterborough.  
 Hamilton Motor Works, Ltd., 191 Barton St. E., Hamilton.  
 Hamilton Stove and Heater Co., Hamilton.  
 Hartley Foundry Co., Brantford.  
 Hepburn, Jno. T., 18 Van Horne Ave., Toronto.  
 Hespeler Machinery Co., Ltd., Hespeler.  
 Howard Furnace Co., 371 Yonge St., Toronto.  
 Inglis, Jno., Co., Ltd., 14 Strathecona Ave., Toronto.  
 International Marine Signal Co., Ltd., Ottawa.  
 Jardine, A. B., & Co., Hespeler.  
 Jenckes Machine Co., Ltd., St. Catharines.  
 Johnston Foundry Co., Kemptville.  
 Joselin, P., 24-26 Pearl St., Toronto.  
 Karch, H. W., Hespeler.  
 Kerr Engine Co., Ltd., Walker Road, Walkerville.  
 Lawson, Thos. A., & Son, 378 Wellington St., Ottawa.  
 Lee Bros., James St., Wallaceburg.  
 Lee Mfg. Co., Ltd., Pembroke.  
 Listowel Drilling Machine Co., Listowel.  
 London Concrete Machinery Co., Ltd., London.  
 London Machine Tool Co., Ltd., Lottridge St., Hamilton.  
 Long, E., Mfg. Co., Ltd., Orillia.  
 Madison Williams Mfg. Co., Ltd., Lindsay.  
 Marsh & Henthorn, Ltd., Belleville.  
 Martin Pump and Machine Co., 47 Davies Ave., Toronto.  
 McClary Mfg. Co., York and Wellington Sts., London.  
 McRae, Jno., 81 William St. N., Lindsay.  
 McFarlane-Douglas Co., Ltd., 250 Slater St., Ottawa.  
 McKeough & Trotter, Ltd., 17 Thames St., Chatham.  
 Meadows, Geo. F., Wire, Iron and Brass Works Co., Ltd., 479 W. Wellington St., Toronto.  
 Midland Engine Works Co., Manly St., Midland.  
 Mills, A., Merrickville.  
 Millwright and Machine Co., 89 Bathurst St., London.  
 Mississippi Iron Works, Almonte.  
 Mitchell, J. J., & Son, 129-131 York St., Hamilton.  
 Modern Machine Co., Wellington and Lyon Sts., Ottawa.  
 Moore, D., Co., Ltd., Catharine St. N., Hamilton.  
 Morrison, Jas., Brass Mfg. Co., Ltd., 93 Adelaide St. W., Toronto.  
 Mowry & Sons, Gravenhurst.  
 Muskoka Foundry Co., Bracebridge.  
 National Concrete Mfg. Co., Lindsay.  
 Northern Foundry and Machine Co., Ltd., Sault Ste. Marie.  
 Norworthy, C., Co., Ltd., St. Thomas.  
 North Bay Iron Wire and Gen. Metal Works, Regina St., North Bay.  
 Ombreau, L., & Sons, Raglan St., Renfrew.  
 Otis-Fensom Elevator Co., Ltd., Victoria Ave. N., Hamilton.  
 Park Bros., William St., Chatham.  
 Payette, P., & Co., Penetanguishene.  
 Pease Foundry Co., Ltd., 36 Queen St. E., Toronto.  
 Peerless Furnace Co., 548 College St., Toronto.  
 Pepper, Wm., & Co., Forest.  
 Piper, N. L., Railway Supply Co., Ltd., 314 Front St. W., Toronto.  
 Plant, W. P., Bridge St., Hastings.  
 Plummer Bros., Mill St., Bolton.

Polson Iron Works, Ltd., Esplanade East, Toronto.  
 Preston Woodworking Machinery Co., Ltd., Presto.  
 Reid & Brown Foundry, Toronto.  
 Robertson, P. L., Mfg. Co., Ltd., Milton.  
 Roblin, J. J., & Co., Brighton.  
 Roman Stone Co., Weston.  
 Sahlstrom Ozonizers, 22 Castle Bldg., Ottawa.  
 Selby & Goulden, Ltd., Kingston.  
 Sheldon's Limited, Galt.  
 Smiths Falls Malleable Castings Co., Ltd., Smiths Falls.  
 Specialty Mfg. Co., Grimsby.  
 Standard Fitting and Valve Co., Ltd., 252 York Road, Guelph.  
 Stevens Co. of Galt, Ltd., Galt.  
 St. Clair Foundry Co., 2161 St. Clair Ave., West Toronto.  
 Standard Foundry and Mach. Co., Dunnville.  
 Standard Sanitary Mfg. Co., Ltd., Royce and Lansdowne Sts., Toronto.  
 Standard Silver Co., 35 Hayter St., Toronto.  
 Stewart, Jno., 7 Walnut St., Paris.  
 Stratford Mill Building Co., Ltd., Stratford.  
 Sumbling, W. H., Machinery Co., 643 Yonge St., Toronto.  
 Superior Repairing and Mfg. Co., London.  
 Tanney, L. N., Iroquois.  
 Taylor Bros., Main St., Vankleek Hill.  
 Thessalon Foundry and Machine Works, Thessalon.  
 Toronto Iron Works, Ltd., Cherry St., Toronto.  
 Turnbull Elevator Mfg. Co., 126-130 John St., Toronto.  
 Verity Plow Co., Ltd., Brantford.  
 Victoria Foundry Co., Ltd., Brantford.  
 Vulcan Co., Ltd., The, 84-94 Fullarton St., London.  
 Wabi Iron Works, Ltd., New Liskeard.  
 Walker Foundry, Belleville.  
 Waterous Engine Works Co., Brantford.  
 Watson Pattern Works, 1200 Queen St. W., Toronto.  
 Wells Pattern and Machine Works, 98-102 Jarvis St., Toronto.  
 Wettlaufer Bros., 178 Spadina Ave., Toronto.  
 Wettlaufer Bros., Mitchell.  
 Whitelaw, R., Woodstock.  
 Wilson & Son, 67 Esplanade East, Toronto.  
 Woodside Bros., 173 Manitou St., Port Arthur.

#### PICTURE FRAMES AND MOULDINGS.

Canadian Picture Frame Co., Toronto.  
 Matthews Bros., Ltd., 788 Dundas St., Toronto.  
 Reliance Moulding Co., Ltd., 130 Richmond St., West, Toronto.

#### PULP.

Alabastine Co., Ltd., The, Paris (also Caledonia).  
 Booth Paper Co., Ottawa.  
 Canadian Power and Paper Co., Toronto.  
 Colonial Wood Products Co., Ltd., Thorold.  
 Davy, Jas., Niagara Falls.  
 Dryden Timber and Power Co., Dryden.  
 Foley-Rieger Pulp Paper Co., Thorold.

Georgetown Paper Mills, Georgetown.  
 Grenville Board and Pulp Co., Thorold.  
 Hammermill Pulp and Paper Co., Latchford.  
 Lake Superior Paper Co., Ltd., Sault Ste. Marie.  
 Miller Bros. Co., Ltd., Glen Miller.  
 Northern Islands Pulp Wood Co., Port Arthur.  
 Northumberland Paper and Electric Co., Ltd., Campbellford.  
 Ontario Pulp and Paper Co., Sturgeon Falls.  
 Riordon Paper Mills, Hawkesbury (Hd. Office, Montreal).  
 Spanish River Paper and Pulp Mills, Ltd., Espanola.  
 Toronto Paper Mfg. Co., Cornwall.  
 Trent River Paper Co., Frankford.

## PUMPS, TANKS AND SILOS.

Ackert, Fred A., Ingersoll.  
 Ball Planing Mill Co., Bayfield St., Barrie.  
 Bowman, A. M., & Co., Elmira.  
 Bowser, S. F., & Co., Inc., 66-68 Fraser Ave., Toronto.  
 Bristol, N., Madoc.  
 Broom, T. D., & Son, cor. Canterbury and Beale Sts., Woodstock.  
 Brown & Co., Ltd., Water St., St. Marys.  
 Brown, Geo., Wyoming.  
 Card, J. E., Brighton.  
 Chambers, Geo., Ontario St., Watford.  
 Coates, A., & Sons, Brant St., Burlington.  
 Connor, W. I., Durham.  
 Decker, C. A., 79 Prince St., Forest.  
 Delaney, Thos., & Co., 471 King St. E., Toronto.  
 Durant, A., & Sons, Vankleek Hill.  
 Fox & Co., 432 King St. W., Toronto.  
 Gartley, E., Pump Works, Tweed.  
 Goderich Organ Co., Ltd., East St., Goderich.  
 Goderich Planing Mills Ltd., Nelson St. and Cambria Road, Goderich.  
 Gould, Shapley & Muir Co., Ltd., Brantford.  
 Grant's Spring Brewery Co., Ltd., Hamilton.  
 Hart Bros., Madoc.  
 Hayes, H., Springfield.  
 Heaman, Geo., 665 Dundas St. E., London.  
 Heath, W. H., 29 Wallace St., Wallaceburg.  
 Hewitt, Jas. A., Beamsville.  
 Hillock, Jno., & Co., Ltd., 154 George St., Toronto.  
 Huehn, C. H., cor. Queen and Earl Sts., Waterloo.  
 Irvin, Jno., John St., Port Perry.  
 Johnston, Jas., Tambling's Corners.  
 Kribs, W. A., Avenue St., Hespeler.  
 Laird Bros., Camden St., Dresden.  
 Longstaff, Walter, Main St., Weston.  
 Mastin, Jas., Hall St., Gore Bay.  
 Matthews Pump Co., Chesterville.  
 Maxwell, Wm., Rideau St., Kemptville.  
 McElroy, W. H., Blyth.  
 McKinney, A. J., 156 Riddell St., Woodstock.  
 Metzger, Adam, Alma St., Hanover.  
 Mickle Dymont & Son, 284 Colborne St., Brantford.

Mitchell & Graham, Stinson St., Rodney.  
 Mundell, B., Erin.  
 O'Keefe, M., Chesterville.  
 Ontario Wind Engine and Pump Co., Ltd., Toronto.  
 Patterson-Tilley Co., cor. Cathcart and Robert Sts., Hamilton.  
 Perth Planing Mill, Kippen St., Perth.  
 Rusk, W., Paisley St., Paisley.  
 Saunders, W., cor. John and Curry Sts., Dutton.  
 Small, F. J., Dutton.  
 Stinson, W. I., 114 Wharncliffe Rd., London.  
 Talbot & Talbot, 952 Queen St. W., Toronto.  
 Tilden, C., Mount Brydges.  
 Tinkess, J. C., Hallville.  
 Welsh, J. S., Seaforth.  
 West & Jackson, Tillsonburg.  
 Whitmore, Geo., Durham.  
 Woodstock Wind Motor Co., Ltd., 655 Canterbury St., Woodstock.

## REFRIGERATORS.

Barnett Mfg. Co., Ltd., Renfrew.  
 Bogart, E. M., North Bay.  
 Eureka Refrigerator Co., Ltd., Toronto.  
 Fletcher Mfg. Co., Ltd., Glencoe.  
 Hamm & Nott Co., Ltd., Brantford.  
 Hillock, Jno., & Co., Ltd., 154 George St., Toronto.  
 Lee Mfg. Co., Ltd., Pembroke St., Pembroke.  
 Sanderson-Harold & Co., Ltd., J. broke St., Pembroke.  
 Smart, Jas., Mfg. Co., Ltd., Water St., Brockville.

## SASH, DOOR AND PLANING MILL PRODUCTS.

Ament, P., Brussels.  
 Anglin, S., & Co., Kingston.  
 Art Glass and Architectural Co., C. T. Jeffreys & Co., 400-8 Wellesley St., Toronto.  
 Atchison, D., & Co., 98 Main St. W., Hamilton.  
 Atchison & Co., 2nd St., Cornwall.  
 Avery, H., & Sons, 114 Stanley Ave., Ottawa.  
 Avey Bros., 131 Clarence St., Brantford.  
 Avey O'Loughlin Lumber Co., 92 Grey St., Brantford.  
 Baird, D. C., St. Marys.  
 Balcom, H. Z., Aylmer.  
 Baldwin, W. W., Steelton.  
 Ball Planing Mill Co., Ltd., The Bayfield St., Barrie.  
 Bamford Bros., Listowel.  
 Batts Ltd., 374 Pacific Ave., West Toronto.  
 Beach Co., Ltd., M. F., Winchester.  
 Beatty Bros., St. David's St., Fergus.  
 Becker, Conrad D., Wellesley.  
 Benor, Jas. & Chas., Grand Road, Campbellford.  
 Benson & Bray, Midland.  
 Beake Mfg. Co., Ltd., The Brunswick Ave. and Bridgeman Sts., Toronto.  
 Boileau, P., Eastview, Ottawa.  
 Botterill, J. W., Lakefield.  
 Bowen, G. B., Warkworth.  
 Bowman, A. M. & Co., Elmira.

Bowman Lumber Co., Ltd., The, King St. W., Dundas.  
Braithwaite, J. & Co., Crysler.  
Brennen & Sons Mfg. Co., Ltd., The, King William St., Hamilton.  
Bristol, N., Madoc.  
Brockville Lumber Co., Ltd., The, William and Lewis Sts., Brockville.  
Broom, T. D., & Son, cor. Canterbury and Beale Sts., Woodstock.  
Brown & Co., Ltd., Water St., St. Marys.  
Bryan, Geo. M., 524 Young St., Toronto.  
Bryan Mfg. Co., Ltd., The, Maine St., Collingwood.  
Builders Lumber and Supply Co., Division St., Welland.  
Campbell & Donaldson, Teeswater.  
Canada Casket and Lumber Co., Queen St., Rodney.  
Carew Lumber Co., The John, Lindsay.  
Cavers, James, & Son, Carleton Place.  
Chambers, Geo., Ontario St., Watford.  
Chapman Engine and Mfg. Co., The, Dundas.  
Charters, Wm., Providence Bay.  
Charters, W. C., Lumber Co., 828 Kingston Rd., Toronto.  
Chippewa Lumber Co., The, Southampton.  
Christie, Robt., Holstein.  
Clark, Zenus, Durham.  
Cockburn Lumber Co., King St., Dundas.  
Cole, Jas. A., & Co., Main St. E., North Bay.  
Coon, Jehoida, Mill St., Morton.  
Corcoran, P. J., 306 St. Clarens Ave., Toronto.  
Corey, B. P., Petrolea St., Petrolea.  
Cornell, Wm., Havelock.  
Cottrill, B., Huntsville.  
Coulter Bros., Forest.  
Cowper, M., Front St., Thamesford.  
Cox, Albert, 50 Geneva St., St. Catharines.  
Cutler, J. C., North Main St., Welland.  
Cyr, W. M., Planing Mill, Montreal Road, Eastview, Ottawa.  
Dashwood Planing Mill Co. Ltd., Dashwood.  
Davidson, Jas., Wellington St., Ottawa.  
Davidson, John, William St., Smiths Falls.  
Davidson's Supply Co., The, Brighton.  
Day-Hamilton Moulding Co., 491-493 King St. W., Toronto.  
De LaPlante, L. A., Ltd., 218 Mair St., Toronto.  
Denniss, W. C., Bracebridge.  
DesRivieres, J. A., 240 Church St., Ottawa.  
Dillon, W. E. Co., Ltd., 76 and 78 Richmond St., Toronto.  
Doty Engine Works, The, Goderich.  
Dougall, R. J., Hallville.  
Douglas Bros., Ltd., 124 Adelaide St. W., Toronto.  
Drake, J. M., Queen St., Kincardine.  
Dyment-Baker Lumber Co., London.  
Eaton, J. R., & Sons, Ltd., Orillia.  
Eckel, Mrs. C. T., Killaloe Stn.  
Elliott, Jas. S., & Son, Prescott.  
Erskine Bros., Rockland.  
Ewing & Murphy, 18 Cameron St., Toronto.  
Fenelon Falls Planing Mills, Fenelon Falls.  
Finch Electric Light and Lumber Mfg. Co., Ltd., Finch.  
Fisher, Val. G., Ayton.

Fox & Co., 432 King St. W., Toronto.  
Frazer, W. F., Catharine and Bronson Sts., Ottawa.  
Gale, T. G., 98 Athol St., Oshawa.  
Gay, H., & Sons, Athol St., Oshawa.  
George, S., Aurora.  
Georgian Bay Shook Mills Ltd., Midland.  
Gerolamy, W. A., Tara.  
Gerry, Wm., & Sons, 21-23 York St., London.  
Gibson Bros., Lucan.  
Gibson, McCormack, Irvin Co., Ltd., 26 Vine Ave., Toronto.  
Gilchrist, John C., 188 Perth Ave., Toronto.  
Gilpin Bros., Beresford.  
Goatbe, John, Comber.  
Goderich Organ Co., Ltd., The, East St., Goderich.  
Goderich Planing Mills, Ltd., The, Nelson St. and Cambria Rd., Goderich.  
Gold Medal Furniture Mfg. Co., Ltd., Van Horne and Bartlett Sts., Toronto.  
Gorvett, W. G., Arthur.  
Grant Salisbury Mfg. Co., The, 83 Cathcart St., Hamilton.  
Gray, Geo., & Sons, Mill St., Harriston.  
Green Lumber Co., Ltd., 1 White St., St. Thomas.  
Hadley, S., Lumber Co., Ltd., The, 47 Wellington St., Chatham.  
Hamm & Nott Co., Ltd., The, Brantford.  
Hamer, Robt., 214 Park St., Port Arthur.  
Hamilton & Prout, Forest.  
Hancock, T. H., 1372 Bloor St. Toronto.  
Hanna Bros., Bridgeburg.  
Harriman, Jas., Simcoe St., Niagara Falls.  
Harrison, J., & Sons Co., Ltd., 1417 2nd Ave., Owen Sound.  
Haugh, Geo. C., 117 Church St., Windsor.  
Head, H., Smithfield.  
Heath, W. H., 29 Wallace St., Wallaceburg.  
Heise, J. A., Stouffville.  
Henderson & Montgomery, Dundalk.  
Hepburn Bros., Bridge St., Picton.  
Hesson, W. J., & Co., Bay St., Sault Ste. Marie.  
Hewitt, Jas. A., Beamsville.  
Higginson, J. G., Main St., Hawkesbury.  
Hill, Luxton, Blyth.  
Hill, Jas., Ottawa.  
Hillock, Jno. & Co., Ltd., 154 George St., Toronto.  
Houston Co., Ltd., The, Tweed.  
Hughes, Jos., Teeswater.  
Ingle Planing Mill, The, cor. Cambridge and Wellington Sts., Lindsay.  
Innes, L., & Sons, Richmond Hill.  
Irons & Winnacott, cor. King and Queen Sts., Huntsville.  
James, R. H., Simcoe St. N., Oshawa.  
Jones Hardware Co., The, Brock St., Uxbridge.  
Jones & Martin, Millton.  
Kalbfleisch, F. C., Zurich.  
Kaufman, Jacob, 235 King St., Berlin.  
Kerr, I & I, Co., Ltd., Petrolea.  
Kerr, G. A., Creemore.  
Knechtel, S., Wood-turning Co., The, Southampton.  
Knight, G. T., & Son, Meaford.  
Knight Bros. Co., Ltd., The, Burke Falls.

- Kribs, W. A., Avenue St., Heapeler.  
Lacelle, F., St. Eugene.  
Laidlaw, R., Lumber Co., Ltd., 65 Yonge St., Toronto.  
Laidlaw, R. Lumber Co., Devine St., Sarnia.  
Laird Bros., Camden St., Dresden.  
Large Bros., 456-60 Salem Ave., Toronto.  
Latimer, W. D., Alliston.  
Laverdure, E., East View, Ottawa.  
Lawrence, W. F. & Sons, Sarnia.  
Leeder, W., 460 Salem Ave., Toronto.  
Lever, J. H., Wellington St., New Liskeard.  
Light, R., Napanee.  
Lindop, H., 60 Moore St., St. Thomas.  
Lloyd, C., & Son, Wingham.  
Ludlam-Ainslie Lbr. Co., Ltd., 413 Erie N., Leamington.  
Lymburner, A. M., Planing Mill, Cayuga.  
MacKenzie, J. B., Georgetown.  
Mark, W. H., & Co., Parkhill.  
Marshall, H. C., 507 Davenport Rd., Toronto.  
Martin, H., First Ave. E., North Bay.  
Mason, Geo. M., Ltd., Wellington St., Ottawa.  
Mastin, Jas., Hall St., Gore Bay.  
Matthews, Geo. H., cor. Arthur and Norah Sts., Fort William.  
McAuliffe Davis Lbr. Co., Ltd., The Chamberlain Ave., Ottawa.  
McAuslan, A., Planing Mill, 31 Concession St., Galt.  
McCabe, R. I., cor. Queen and Albert Sts., Tottenham.  
McCall & Co., Main St., St. Williams.  
McCallum, Benj. G., Jane St., Palmerston.  
McCamus & McKelvie, New Lism.  
McCormack & Carroll, 82 Adelaide St., Toronto.  
McDonald, A., Estate of, George St., Peterborough.  
McEachern, D. J., Alvinston.  
McGibbon, F., & Sons, Sarnia.  
McKay, A. H. & J. H., Tiverton.  
McKenzie, Thos., Clinton.  
McKie, W. J., 69 London St. W., Windsor.  
McKinney, A. J., 156 Riddell St., Woodstock.  
McLaren, Peter, Brockville.  
McLaughlin & Gourlay, Elizabeth and Terauley Ste., Toronto.  
McLaurin, John R., Jr., Vankleek Hill.  
McLeay, R. C., Lbr. and Coal Dealer, Watford.  
McMullen, M. F., Ripley.  
McPhee, Neil, Main St., Parkhill.  
Metcalf, Levi, Tottenham.  
Mickle-Dyment & Son, 284 Colborne St., Brantford.  
Miles, C. G., 536 Dundas St., Toronto.  
Mills, A. Lincoln, Brock St., Merrickville.  
Mills, A., Merrickville.  
Milverton Planing Mill Co., Milverton St., Milverton.  
Mitchell, Alfred, Powassan.  
Mitchell & Graham, Stinson St., Rodney.  
Moore, W. C., Bobcaygeon.  
Moore, F. J., & Son, Queen St., Lakefield.  
Mundell, B., Erin.  
Mustard, Geo., Creemore.

Nagle & Mills, Ingersoll.  
Neilson's Mill and Lumber Co., Bay and Front Sts., Stratford.  
Newman, John, Co., 52 Noble St., Toronto.  
Nicholson Lumber Co., Brant St., Burlington.  
Nicholson & Beveridge, 229 Catharine St. N., Hamilton.  
Nicol Bros., 9th Ave. W., Owen Sound.  
Ormsby, A. B., Ltd., Queen and George Sts., Toronto.  
Ottawa Stair Works, Ottawa.  
Parker, John, Sturgeon Falls.  
Patterson-Tilley Co., The, cor. Cathcart and Robert Sts., Hamilton.  
Peace, Wm., Co., Ltd., Bank of Hamilton Building, Hamilton.  
Pearce Co., Ltd., The, Main St., Marmora.  
Peck & Wills, Pinnacle St., Belleville.  
Pembroke Lumber Co., Pembroke.  
Perth Planing Mill, Kippen St., Perth.  
Peterman, Jas. R., Bay St., Sault Ste. Marie.  
Peterman, D., & Son, Birch St., Collingwood.  
Phillips Mfg. Co., Ltd., Carlaw Ave., Toronto.  
Phillips Planing Mill, 943 Keele St., Toronto.  
Phippen Bros., 742 Pape Ave., Toronto.  
Piggott, Jno., & Sons, King St., Chatham.  
Piggott, John, & Sons, 27 London St., Windsor.  
Pomeroy, S., Orillia.  
Pringle Co., The, Coleman St., Belleville.  
Pulleyblank, W. H., Queen St., St. Marys.  
Quance Bros., Delhi.  
Queen City Planing Mill, 314 Queen St. W., Toronto.  
Rathbone, Geo., Ltd., 10 Northcote Ave., Toronto.  
Redick, Jas. H., Trenton.  
Reid, John, Waterdown.  
Restall, R. A. & Co., 1074 Queen St. E., Toronto.  
Richardson, F., Ingersoll.  
Richardson, Udney, Elora.  
Riddell, John E., 12-14 Ferguson Ave. N., Hamilton.  
Roger, Thos., 49 Mary St., Barrie.  
Ross & Co., Water St., Cornwall.  
Ross Taylor Co., Ltd., The, Exeter.  
Rounds, F., North Main St., Welland.  
Rudd & Co., Arnprior.  
St. Clair Construction Co., Ltd., 1806 Davenport Rd., Toronto.  
Salmon Lumber Co., Liskeard.  
Sanderson-Harold Co., Ltd., Paris.  
Saunders, Wm., cor. John and Curry Sts., Dutton.  
Schell, J. T. Co., The, Alexandria.  
Scholey Bros., Ltd., Toronto.  
Schultz Bros. Co., Ltd., 35-49 Albion St., Brantford.  
Schwalm, Geo., & Sons, Mildmay.  
Scott, J. C., & Co., Ltd., 90-108 River St., Toronto.  
Seaman & Kelt Co., Ltd., Mission St., Fort William.  
Shier, J. D., Lumber Co., Ltd., Bracebridge.  
Shirton, Wm., Co., The, Forest St., Dunnville.  
Siemon Co., Ltd., The, Confederation Life Building, Toronto.  
Simpson, Robt., Co., Ltd., The, 160 Yonge St., Toronto.  
Smart, Jas., Mfg. Co., Ltd., The, Water St., Brockville.  
Smith, Watson Co., Ltd., The, 165 Geary Ave., Toronto.

Smith, C., & Sons, Durham.  
 Smith & Free, Mimico.  
 Snelgrove, James, Beaverton.  
 Sparling, Jas., Meaford.  
 Spooner, W., & Co., cor. Bloor and Gladstone Sts., Toronto.  
 Stewart, Walter, & Son, Lucknow.  
 Stoneburg, M. H., Perry Ave., Brighton.  
 Storey, D., 403 Bank St., Ottawa.  
 Sykes, J. D., Athol St., Oshawa.  
 Taylor, Chas., Drumbo.  
 Taylor, James, Sutton West.  
 Tessier, Alphonse, Penetanguishene.  
 Travis, W. J., Wyoming.  
 Truax, R., & Son, Walkerton.  
 Tugnett & Cottrell, Trenton.  
 Vankleek Hill Mfg. Co., Ltd., The Mill St., Vankleek Hill.  
 Venator, W. L., cor. York and Bay Sts., Hamilton.  
 Vigers Shear Lumber Co., Ltd., South Water St., Port Arthur.  
 Walker, A., Russell.  
 Walton, Geo., & Co., Mill St., Belleville.  
 Wand, E., 6-8 Hunter St. E., Peterborough.  
 Weiner, A. K., Carriage Co., Jordan.  
 Welsh, Wm., Hensall.  
 West & Jackson, Tillsonburg.  
 Westport Woodworking Co., Westport.  
 White, Geo. J., 165 Main St., Hamilton.  
 Williams, Chas. B., 11 St. Albans St., Toronto.  
 Williamson, Victor, Walker Rd. and Huron St., Walkerville.  
 Wilson, Jas. E., Riverdale and Cameron Sts., Ottawa South.  
 Wilson Bros., Ltd., Collingwood.  
 Wright, C., Church St., St. Marys.  
 Young & Co., 79 Stafford St., Toronto.  
 Zimmerman Bros., Tavistock.

## SPORTING GOODS.

Brunswick-Balke-Collender Co., 67 Adelaide St. W., Toronto.  
 Canadian Billiard Table and Supply Co., 110 York St., Toronto.  
 Walter Dean Boat and Canoe Co., 1751 Queen St. W., Toronto.  
 Ewing & Murphy, 18 Cameron St., Toronto.  
 Hahn, Geo. W., Wiarton.  
 Hilborn Co., Ayr.  
 Lakefield Canoe Bldg. and Mfg. Co., Ltd., Lakefield.  
 Lally Lacrosse Mfg. Co., Cornwall.  
 May, Samuel, & Co., Toronto.  
 Reid Bros. Mfg. Co., 1110 Queen St. W., Toronto.  
 Russell Motor Car Co., Toronto.  
 Salyards, E. B., Hamilton St., Preston.  
 St. Marys Wood Specialty Co., Ltd., St. Marys.  
 Still, J. H., Mfg. Co., Ltd., Elm St., St. Thomas.  
 Tobin Arms Mfg. Co., Ltd., Woodstock.  
 Webb Mfg. Co. of Toronto, Ltd., 14-16 Markham St., Toronto.

## TABLES.

Baird Bros., Plattsville.  
 Beach Furniture Co., Cornwall.

Bell Furniture Co., Ltd., Southampton.  
Ben Hur Mfg. Co., Ltd., Hamilton.  
Geo. E. Bilton, 53 Sullivan St., Toronto.  
Canada Furniture Manufacturers, Woodstock.  
Chesley Furniture Co., Ltd., Chesley.  
Dairs, Jno., 7 Frank St., St. Catharines.  
Elmira Furniture Co., Ltd., Union St., Elmira.  
Elora Furniture Co., Elora.  
Harriston Furniture Mfg. Co., Ltd., Harriston.  
Hepworth Mfg. Co., Hepworth.  
Hibner Furniture Co., Ltd., 39 Edward St., Berlin.  
Kensington Furniture Co., Goderich.  
Knechtel Furniture Co., Ltd., Hanover.  
Malcolm, The Andrew, Furniture Co., Ltd., Kincardine.  
Malcolm & Souter Furniture Co., Ltd., Hamilton.  
Markdale Furniture Co., Markdale.  
McLagan, Geo., Furniture Co., Ltd., Trinity St., Stratford.  
Meaford Mfg. Co., Ltd., Meaford.  
National Table Co., Ltd., Owen Sound.  
Read, Jas., 254-256 Princess St., Kingston.  
Spiesz Furniture Co., Ltd., Hanover.  
Stratford Chair Co., Ltd., 459 Albert St., Stratford.  
Strathroy Furniture Co., Strathroy.  
Thomson, Alex., cor. York and Day Sts., Hamilton.

## VEHICLES, SLEIGHS AND AUTOMOBILES.

Alexander Bros., Ailsa Craig.  
Andrews, Edgar, Aurora.  
Armstrong, J. & P., 201 Bridge St., Ottawa.  
Armstrong, J. B., Co., The, Guelph.  
Bain Wagon Co., Ltd., The, Woodstock.  
Barrington, J. M., Russell.  
Baynes Carriage Co., Ltd., The, Gilkenson Ave., Hamilton.  
Beger, R. E., New Hamburg.  
Benson & John, 952 Queen St. W., Toronto.  
Berkner, Geo., Milverton.  
Boileau, P., 28 Clarence St., Ottawa.  
Booth & Pond, Jarvis.  
Borland Sulky and Cart Co., The, Stratford.  
Brandon, M. S., 188 Strachan Ave., Toronto.  
Brantford Carriage Co., Brantford.  
Brown, W. H., Milford.  
Brown, E., 165-7-9 Adelaide St., Toronto.  
Brown & Clark, Hensall.  
Bruce Agricultural Works, Teeswater.  
Brunsdon, Jno., & Son, Londesborough.  
Buskard, Robt., Market St., Hamilton.  
Campbell, Jno., & Son, London.  
Canada Carriage Co., Brockville.  
Candler, the Wm., Co., 89 Stephenson Ave., Toronto.  
Chabot, Adolphe, York St., Ottawa.  
Chatham Malleable and Steel Mfg. Co., Chatham.  
Chittick & Lee, Kingsville.  
Church Bros., Orillia.

- Climax Good Roads Machinery Co., Ltd., 46 Merrick St., Hamilton.  
Clinton Motor Car Co., Ltd., The, Clinton.  
Clipsham, J. E., & Sons, Gravenhurst.  
Conboy Carriage Co., Ltd., The, Queen St. E. and Don, Toronto.  
Cowper, M., Thamesford.  
Craik, Alex., Strathroy.  
Crawford, L. W., 339 Horton St., London.  
Crow, T. A., Yonge and Isabella Sts., Toronto.  
Cust, Chas. E., 112 McNab St. N., Hamilton.  
Davidson, Jas., Thessalon.  
Deruchie, Norman, Cornwall.  
Dick, Wm., & Son, Bolton.  
Dickinson, R. C., 238 Barton St. E., Hamilton.  
Dore, Wm., Wingham.  
Dorion, C. A., 400 St. Patrick St., Ottawa.  
Dreak, Wm., Arthur.  
Dufour, Jos., 245-7-9 Rideau St., Ottawa.  
Duggan Bros., 10-12 Duchess St., Toronto.  
Duhamel, L., Ltd., 107 Murray St., Ottawa.  
Duncan, J. G., Smiths Falls.  
M. F. Co. of Canada, Ltd., Walkerville  
Elder, Robt., Carriage Works, Ltd., Soho and Phoebe Sts., Toronto.  
Elliott, R., Brampton.  
Ewan, D., & Co., Brussels.  
Ferguson Carriage Works, Owen Sound.  
Finnigan Carriage and Wagon Co., The, Belleville.  
Fillion, S., Embrun.  
Fitzsimmons, J. A., Cannington.  
Flett, J., Warton.  
Forest City Bent Goods, London.  
Fraser, Hugh, & Son, Pembroke.  
Geiger, A. S., Breslau.  
Glebe, Geo., Ayton.  
Gleeson Bros., 74 Fullarton St., London.  
Gould & Mohan, 346-348 Wellington St., London.  
Graham, J. M., Napanee.  
Grant, J. A., Kemptville.  
Greer, A. B., cor. York and Talbot Sts., London.  
Guelph Carriage Top Co., Guelph.  
Hall, J. W., Merlin.  
Harris Bros., Wellington.  
Hastings Wagon Co., Ltd., Watford.  
Heaman, Geo., 665 Dundas St., E. London.  
Heard, Jno. A., Flesherton.  
Heard & Co., Jno., St. Thomas.  
Henderson, R. J., Front St., Bobcaygeon.  
Hext, Geo., Brantford.  
Hicks, W. H., Perth.  
Hughes, Jas., Teeswater.  
Ingersoll Hearse Co., Ingersoll.  
International Harvester Co. of Canada, Chatham.  
Jackson Wagon Co., St. George.  
Jobin, 'lix, Toronto.  
Johnston, J. R., Dundas.  
Kalbfleisch Bros., Stratford.

Knapton, J. C., & Co., Parkhill.  
Knight, G. T., & Son, Meaford.  
Latimer, W. D., Alliston.  
Laturney, Jas., 390 Princess St., Kingston.  
Leach, Harry, Meaford.  
Lemay, Octave, 185 Dalhousie St., Ottawa.  
Lewis, Wm. H., 493-499 Dundas St., Toronto.  
Lilly, T. E., Dutton.  
London Foundry Co., Ltd., cor. King and Thames Sts., London.  
Malone Vehicle Works, Dutton.  
Mastin, Jas., Gore Bay.  
McArthur, J. A., Paisley.  
McArthur, A. S., Beeton.  
McBrien, Thos., Ripley.  
McCallum, A., 236 King St., London.  
McDougall, Jos., Arnprior.  
McFarlane, J. K., Selkirk.  
McKie Buggy Co., Plattsville.  
McLaughlin Carriage and Motor Car Co., Oshawa.  
McMillan, P., & Sons, Beaverton.  
Mercier, A., Vankleek Hill.  
Milner, Robt., Chatham.  
Mitchell & Co., Ingersoll.  
Moore, W. C., Bobcaygeon.  
Mount Forest Carriage Co., Mount Forest.  
Munro, Jno. R., 555 Richmond St., London.  
Munro & McIntosh Carriage Co., Ltd., Alexandria.  
Needham, Robt., Almonte.  
Nelson Bros., Dundas.  
Ottawa Car Co., Ltd., 311 Slater St., Ottawa.  
Patterson, J. D., & Co., 17-27 Park St., Hamilton.  
Penfold, S. & G., Guelph.  
Petrolia Wagon Co., Petrolia.  
Phillips, W., Blyth.  
Piché & Genest, Sandwich.  
Port Arthur Wagon Co., Ltd., Markham.  
Pulford, A., Amherstburg.  
Raham, J. C., & Co., Uxbridge.  
Reid & Ross, Guelph.  
Thos. Richards, Billings Bridge.  
Rondeau, N. A., 408 Wellington St., Ottawa.  
Roney, T. W., Mitchell.  
Ross, Andrew, Hamilton.  
Ross, J., 26 Walnut St. N., Hamilton.  
Rounding, H., Grand Valley.  
Russell Motor Car Co., Toronto.  
Rutherford, David, Owen Sound.  
St. Charles Omnibus Co., The, Belleville.  
Sanford & Brooks, Madoc.  
Saunders, J., Watford.  
Scott, C. J., Brantford.  
Sharp Bros., Watford.  
Sinclair, D., Lindsay.  
Skitch, Edw., Campbellford.  
Spence, A. & Sons, 272-282 Colborne St., Brantford.

Spence, W., 18 Barker St., Niagara Falls.  
Squire, Simon, Listowel.  
Tanner's Carriage Works, 71 Merrick St., Hamilton.  
Templin Mfg. Co., Ltd., The, Fergus.  
Tudhope-Anderson Co., Ltd., The, West Lorne.  
Tudhope Carriage Co., Ltd., The, Orillia.  
Thomas, G. H., 496 Adelaide St., London.  
Todd, W. H., Stouffville.  
Turner, Saml., 347 Ridout St., London.  
Vandyke, J., & Sons, Grimsby.  
Vandyke, R. F., Mountain St., Grimsby.  
Wagner, H., & Son, Phillipsburg.  
Walker, J. H. D., Grimsby.  
Waller, T. C., & Sons, Tillsonburg.  
Warren Bros., 416 Talbot St., London.  
Watson Carriage Co., 98 Friel St., Ottawa.  
Way, Amos, Demorestville.  
Weber, L., Markham.  
Wegg, Geo., & Son, St. Thoma.  
West, C. N., John St., Hagersville.  
Whitaker, Wm., & Sons, Oakville.  
Wood, D. B., Cornwall.  
Zimmer, Louis, St. Agatha.

## VEHICLE SUPPLIES.

Bain Wagon Co., Ltd., The, Dundas St. E., Woodstock.  
Baynes Carriage Co., Ltd., The, Gilkenson Ave., Hamilton.  
Beger, R. E., Huron and Waterloo Sts., New Hamburg.  
Benjamin Mfg. Co. of Yarker, Ltd., Yarker.  
Botterill, J. W., Lakefield.  
Brantford Carriage Co., Brantford.  
Bruce Agricultural Works, Teeswater.  
Cameron Dunn Mfg. Co., The, Strathroy.  
Canada Wheel Works, Ltd., Merrittton.  
Chaplin Wheel Co., Ltd., 240 Raleigh St., Chatham.  
Chapman Engine and Mfg. Co., Ltd., Dundas.  
Church Bros., Mississauga St., Orillia.  
Clipsham, J. E., & Sons, Gravenhurst.  
Close & Co., Wilson St., Woodstock.  
Columbia Handle and Lumber Co., The, London.  
Conboy Carriage Co., Ltd., The, Queen St. E. and Don, Toronto.  
Crawford, L. W., 339 Horton St., London.  
Crawford, W. C., Co., Ltd., Tilbury.  
Crown Lumber Co., Ltd., Tecumseh St., Woodstock.  
Cust, Chas. E., 112 McNab St., Hamilton.  
Cutten & Foster, 179 Queen St. W., Toronto.  
Dickinson, R. C., 238 Barton St. E., Hamilton.  
Dufour, Jos., 245-7-9 Rideau St., Ottawa.  
Duhamel, Ltd., 107 Murray St., Ottawa.  
Ferguson Carriage Works, 343 8th St. E., Owen Sound.  
Finlay, J., & Sons Co., Norwood.  
Fitz-Gerald, A. J., Tweed.  
Forest City Bent Goods Co., Ltd., 585 Bathurst St., London.  
Fraser, Hugh, & Son, Pembroke St., Pembroke.

Gould & Mohan, 346-348 Wellington St., London.  
 Hahn, Geo. W., Wiarton.  
 Hastings Wagon Co., Ltd., Watford.  
 Heaman, Geo., 665 Dundas St., East London.  
 Heard, Jno., & Co., St. Thomas.  
 Hore, F. W., & Son, Ltd., Hamilton.  
 International Harvester Co. of Canada, Chatham.  
 Jackson Wagon Co., St. George.  
 Kalbfleisch Bros., Stratford.  
 Klemmer, G., Elora St., Clifford.  
 Knapton, J. C., & Co., Main St., N., Parkhill.  
 Lee, W. G., Holland Centre.  
 Loughheed Bros., Ltd., 267 Front St., Sarnia.  
 Malone Vehicle Works, The, Dutton.  
 McCallum, A., 236 King St., London.  
 McKay, A. H. & J. H., Tiverton.  
 McKie Buggy Co., Plattsville.  
 McMillan & Sons, Beaverton.  
 Mills, A. Lincoln, Brock St., Merrickville.  
 Milner, Wm., Main St., West Lorne.  
 Moore, W. C., Bobcaygeon.  
 Mount Forest Carriage Co., Mount Forest.  
 Petrolia Wagon Co., Petrolia.  
 Pink, Thos., Co. of Canada, Ltd., Alexander St., Pembroke.  
 Port Arthur Wagon Co., Ltd., Markham.  
 Reid & Ross, 8 Gordon St., Guelph.  
 Rondeau, N. A., 408 Wellington St., Ottawa.  
 Roney, T. W., Mitchell.  
 Russell Motor Car Co., Toronto.  
 Sinclair, D., Cambridge St., Lindsay.  
 Steel Co. of Canada, The, Gananoque.  
 Still, J. H. Mfg. Co., Elm St., St. Thomas.  
 Trott, W., Oil City.  
 Truax & Sons, R., Walkerton.  
 Tudhope Anderson Co. Ltd., West Lorne.  
 Tudhope Carriage Co., Ltd., The, Colborne St., Orillia.  
 Turner, Samuel, 347 Ridout St., London.  
 Victoria Wheel Works, Galt.  
 Watson Carriage Co., 98 Friel St., Ottawa.  
 Westport Woodworking Co., Westport.  
 Windsor Turned Goods Co., Ltd., Salter Ave., Windsor

## WOODENWARE.

Beck, C. Mfg. Co., Ltd., Penetanguishene.  
 Canada Spool and Bobbin Co., Ltd., Walkerton.  
 Cane, Wm., Sons Co., Ltd., The, Huron St., Newmarket.  
 Fletcher Mfg. Co., Ltd., Glencoe.  
 Glebe, Geo., Main St., Ayton.  
 Harrison, J., & Sons Co., Ltd., 1417 Second Ave., Owen Sound.  
 Keenan Woodenware Mfg. Co., Ltd., Owen Sound.  
 Mark, W. H., & Co., Parkhill.  
 Meakins & Sons, King St. E., Hamilton.  
 Schultz Bros. Co., Ltd., 35-49 Albion St., Brantford.

Taylor-Forbes Co., Ltd., Guelph.  
Wiarton Woodenware Co., Wiarton.

## MISCELLANEOUS.

Boyd, A. H., Lucknow.  
Canada Spool and Bobbin Co., Ltd., Walkerton.  
Canada Wood Specialty Co., Ltd., The, Orillia.  
Dominion Artificial Limb Co., Ltd., 355 College St., Toronto.  
Dominion Match Co., Ltd., Deseronto.  
Dowler Bros., Dill St., Bracebridge.  
Eastern Pipe and Construction Co., Ltd., The, Alexandria.  
Klemmer, G., Clifford.  
Kuhne, Anderton Mfg. Co., Port Hope.  
Rankin & Co., Toronto.  
Raymond Bros., 172 King St., London.  
Raymond Mfg. Co., Ltd., Suffolk St., Guelph.  
Standard Chemical Iron and Lumber Co., Toronto.  
Thornbury Transportation and Reduction Co., Ltd., The, Thornbury.  
Tobin, Ltd., Stratheona Ave., Ottawa.  
Toronto Hat Block Co., 24 Mercer St., Toronto.

## WICKERWORK.

Ashdown, Jno., Willow Works, 92 Dundas St., Toronto.  
Barratt, Geo., 870 College St., Toronto.  
Bibby, F., & Co., Main St., Dundas.  
Brantford Willow Works, Brantford.  
Edwards, Jas., & Co., 126 Garden Ave., Toronto.  
Eglinton Willow Works, 2261 Young St., Eglinton.  
Esmond, J. P. & F. W., 182 Sparks St., Ottawa.  
Imperial Rattan Co., Ltd., 411 Albert St., Stratford.  
King Furniture Co., Don Esplanade, Toronto.  
Morgan Co., Ltd., The, 42 Wellington E., Toronto.  
Toronto Bamboo and Furniture Co., 87 Richmond Ave., Toronto.  
Toronto Whip Co., 26 Birch Ave. W., Toronto.  
Western Leather Goods Co., Ltd., The, 1911 Bathurst St., Toronto.